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ORIGINAL LECTURES.

THE MIDDLETON GOLDSMITH LECTURES.

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LECTURE II.

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MULTIPLE NEURITIS, AND ITS RELATION TO CERTAIN PERIPHERAL NEUROSES.

In the last lecture we studied the history of multiple neuritis, and incidentally obtained some clinical pictures of various forms of this disease. We also discussed its pathology and its etiology. This evening we must look more carefully at the symptoms presenting themselves in the different varieties of the affection.

An etiological classification of the cases of multiple neuritis appears to be the one most useful to the clinical observer; and as the forms vary considerably in their symptoms, we shall perhaps arrive at a more definite knowledge of the disease if we consider each of the classes separately. It is possible to distinguish—

1. Toxic cases, due to poisoning by alcohol, arsenic, lead, and bisulphide of carbon.

2. Infectious cases, due to the direct action upon the nervous system of the infectious agents producing diphtheria, variola, typhoid and typhus fevers, severe malarial fever, and tuberculosis; to which must be added the agent causing the epidemic form of neuritis known as kakke or beri-beri.

3. Spontaneous cases, due to uncertain causes, among which cold, and exposure to damp and wet, and to over-exertion, may find a place.

1. *Toxic Cases.*—(a) *Multiple neuritis, due to poisoning by alcohol.* While alcoholic paralysis has been universally recognized for many years, it is only within a short time that the symptoms and pathology have been brought into a logical connection. It is to Moeli,¹ of Berlin, and Dreschfeld,² of Manchester, England, that we owe the most important recent contributions to the knowledge of this form of neuritis, though the work of Henry Hun,³ of Albany, and of Bernhardt,⁴ of Berlin, cannot be passed over without recognition.

It will be remembered that among the first cases of multiple neuritis in which an autopsy was made, viz., those of Lancereaux,⁵ the disease was traced to alcoholism. Lancereaux deserves the credit of demonstrating the pathological basis of alcoholic paralysis, for the

descriptions of its symptoms previously given by Jackson and Hun were not accompanied by post-mortem records. But Lancereaux's observations were for many years overlooked by physicians outside of France; and in England, where the disease is well known, it was ascribed, as lately as 1883, to a spinal lesion.¹ But in 1884 Dreschfeld combated this theory, and called attention to its true pathology, showing that cases formerly supposed to be spinal paralysis were really due to an affection of the peripheral nerves.

All observers have emphasized the fact already noted by Jackson, that the disease is especially frequent among females. Males are not, of course, exempt from alcoholic paralysis, but in them the poison seems more liable to manifest itself by acute cerebral symptoms than by those of disease of the peripheral nerves. It is especially frequent among those persons in the higher classes whose nervous organism is highly developed, and who lead a comparatively inactive life. It seems not at all improbable that sedentary habits predispose an alcoholic drinker to this disease, and hence active workers, male or female, though taking an equally large amount of liquor as the luxurious drinker, escape. All alcoholic drinks are not equally prone to produce paralysis. It is the spirituous liquors—brandy, whiskey, gin, and rum, and the liqueurs, absinthe, vermouth, etc.—which are dangerous. And it is only after these drinks have been consumed in large amounts and for a considerable length of time that neuritis develops. Its onset, though often apparently very sudden, is usually gradual. For months the patient has suffered from chronic gastritis, insomnia, general neuralgic pains, or severe pains in the joints or limbs, and from tremor and a certain feebleness in movement, when all at once her legs give way beneath her, and after the sudden fall she finds herself unable to rise. Thus a patient of mine, after a year of such premonitory symptoms, was seized with paralysis quite unexpectedly when getting out of bed in the night. This paralysis soon becomes complete in the feet and legs below the knees, and may advance up the thigh. It next attacks the hands and forearms, and while in all extremities it is often greater in the extensors than in the flexors, in some cases both groups of muscles become entirely helpless. This has been the case in three patients under my care. The paralyzed muscles are flabby, and soon become atrophied, they have no excitability to mechanical irritation, and the tendon reflexes are lost. They fail to react to a faradic current in the majority of cases, though occasionally a very strong current may produce a response. When galvanism is applied the reaction of degeneration is found to be present. No stimulus can be given to the muscle by sending a current through its nerve, and the positive pole produces more marked contractions with an equal current than the negative

¹ Moeli: *Charité Annalen*, 1884.

² *Brain*, Nos. 26 and 32.

³ *Amer. Journ. Med. Sci.*, April, 1885.

⁴ *Zeitsch. f. klin. Med.*, 1886.

⁵ *Gaz. Hebdom.*, 1887.

¹ Wilks: *Dis. of Nerv. System*, p. 272.

pole when placed on the muscle, and then it is only a slow or vermiform movement, not the quick jerk of health. It is also found that strong galvanic currents have to be used to produce any contraction at all. The paralysis of the muscles may advance rapidly in severe cases, involving the motor cranial nerves, the muscles of the trunk, and, lastly, the diaphragm, thus causing death. More frequently, however, it is arrested when only the distal parts of the extremities are involved, and then it gradually subsides until recovery is complete. The position assumed by the paralyzed limbs has been thought to be almost characteristic. There is dropped wrist quite similar to that seen in lead-palsy, and also dropped foot, due to the falling forward of the foot from its own weight, since the anterior tibial muscles are weak. This deformity is increased by the fact that the patients lie in a recumbent posture with the feet extended, and when the flexors of the toes are but slightly affected, as sometimes is the case, their unopposed contraction serves to exaggerate the malposition. If there is entire paraplegia the legs and thighs may both be extremely flexed, so that the heels touch the buttocks, but this is exceptional. While the dropped wrist is the usual deformity of the hands, cases are recorded in which the paralysis was limited to single muscles and to muscles supplied by single nerves. Thus, Lilienfeld describes a weakness of the extensors of the thumb, fourth and fifth fingers, and Leudet mentions a paralysis of the ulnar nerve. In one case of my own the main *en griffe* was the deformity noticed, indicating a weakness of the interossei only. Such cases as those of Hun,¹ where a facial paralysis was seen, or of Lilienfeld,² where double abducens paralysis occurred, are certainly rare, and still more so are those in which irregular rapid pulse has been ascribed to an affection of the pneumogastric.

To the physician these motor symptoms, and the œdema, occasional lividity, profuse sweating, and glossy skin, so often associated with them, are very noticeable. But the patient suffers far more from the disturbance of sensation. In the description of Jackson, the pains were graphically portrayed. They are the cause of terrible agony, sufficient to produce insomnia, and wearing seriously upon the endurance of the sufferer.

In addition to pain, hyperæsthesia is not infrequently observed. It is usually quite extensive in the legs, though in cases of poisoning by absinthe it has been limited to the soles of the feet. The muscles, as well as the skin, are sensitive to handling and to pressure, and marked tenderness in the course of the nerves is always elicited by examination. In one of my cases soon after the onset, the patient could not bear to be touched or moved, though perfectly unable to help herself. Charcot goes so far as to say that muscular sensitiveness associated with flaccid paralysis is pathognomonic of alcoholism.

Paræsthesiæ are always complained of. Numbness, tingling, and formication are frequent. In one of my patients the sensation was as if heavy bracelets were

around the wrists, and as if very tight drawers were on the legs. At other times she felt as if the limbs were swollen, and as if the skin was about to burst. Such sensations may cease as the case increases in severity, and give place to a total lack of sensation in the parts. They return, however, with advancing recovery, and are among the last symptoms to disappear.

Abolition of tactile sense, and to some degree of muscular sense, is the rule after the paralysis is developed. Temperature-sense and the perception of pain are never wholly lost, but may be delayed in transmission. The anæsthesia may be limited to irregular areas, and may be only in the cutaneous distribution of one nerve, but is usually found over the entire distal part of the paralyzed limb. Usually the cutaneous reflexes are preserved. The loss of muscular sense is, in some cases, so marked a symptom, and one of such early occurrence, that Dreschfeld distinguishes a class of cases which he terms ataxic rather than paralytic. And this distinction is perfectly justifiable, for in many cases it is the incoördination which attracts the attention of both the patient and the physician. It is this class of alcoholic cases which may be mistaken for locomotor ataxia, and which have been named by French writers pseudo-tabes alcoolique.¹ But ataxia is not exclusively limited to this class of cases. It may be present in some degree in cases of paralysis, and during recovery from paralysis the deficiency in coördinating power may become evident, and appear to retard the progress of the case. Nor are the cases of ataxia, on the other hand, free from paralysis.

And this fact is proven by the observations of Westphal² and Charcot. For by contrasting the walk of a true ataxic patient with that of an ataxic alcoholic patient they have each discovered several points of difference. The ataxic patient throws the foot forward with undue violence, the toe lifted high in air, and brings first the heel down forcibly and then the entire foot. The alcoholic, however, has some weakness in the muscles of extension and cannot raise the toe. He, therefore, lifts the foot high in order to step over the hanging toe and not to trip on it, but the motion is made without undue force. He then throws the foot forward in order to throw the toes up and get them out of the way as he brings the foot down to the floor. The motion is awkward and has an appearance of one stepping over high obstacles, but it is a voluntary attempt to remedy a deficient power—not the involuntary awkwardness of a man unable to manage strong muscles. There may be in both patients some tottering, and swaying when standing with the eyes closed, the so-called Romberg symptom, is common to both locomotor ataxia and alcoholic neuritis. Dejerine describes the following cases, in which the symptoms resembled that of tabes.

Observation VIII.—Male, aged forty-two, a hard drinker, complained for four months of shooting pains in the legs, and noticed a gradually increasing difficulty in walking, which was worse in the dark. He also had found his feet swollen at times, and had some difficulty

¹ Hun: Loc. cit.

² Lilienfeld: Berl. Gesellsch. f. Psych. u. Nervenkrankheiten, July 15, 1885. See, also, Richard Schultz: Neurol. Centralbl., Nos. 19, 20, and 21, 1885.

¹ Dejerine: Arch. de Phys., 1884.

² Westphal: Ueber eine bei chronischen Alkoholisten beobachtete Form von Gehstörungen; Charité Annalen, 1879. Charcot: Leçons, Progrès Médicale, 1886.

in micturition. Examination on admission to the hospital showed a high grade of ataxia in walking, Romberg's symptom, loss of tendon reflexes, anæsthesia almost total of entire body, considerable analgesia with retardation of sensations of pain, temperature sense being preserved, and loss of muscular sense in the legs. The muscles were slightly feeble and a little diminished in size. It could hardly be said that there was paralysis or atrophy. The diagnosis made was locomotor ataxia of an unusual type. The onset was so rapid, the anæsthesia so extensive and severe, the paresis of the limbs, though slight, so evident, that it differed from a typical tabes. But no other diagnosis could be made from the symptoms. The patient died of chronic nephritis six weeks after admission. The autopsy showed the spinal cord to be normal. But in the cutaneous and to a less degree in the intramuscular branches of the nerve, as well as in the distal parts of the nerve trunks, a high grade of parenchymatous neuritis was found. The nerve tubes had lost their double contour, the myelin sheath was segmented, the protoplasm was increased, the nuclei multiplied. The nerve-trunks on the plexuses, and the nerve-roots were normal. The nerves of the legs were more deeply involved than those of the arms.¹

The second case, in a female forty-nine years of age, presented almost identical symptoms and lesions.

The special senses are occasionally affected in cases of alcoholic paralysis. Amblyopia has been observed, and also defective vision from central scotoma. The field of color-vision is often contracted even when sight is preserved. There may develop a true optic neuritis, evident to the ophthalmoscope, and this may go on to optic nerve atrophy.² Inequality of the pupils is frequently seen, as is also a moderate contraction of the pupil. All these eye symptoms, occurring as they may in a case of the ataxic variety, make a differential diagnosis from locomotor ataxia difficult. The Argyle Robertson pupil (which contracts in accommodation but not to light) has not been seen in alcoholic cases, while it is an early symptom of tabes.

One feature of alcoholic paralysis remains to be noticed, viz., the cerebral symptoms. These are hardly ever wanting. There is at first the excitement rising to the degree of active delirium, with illusions and hallucinations of the various senses; there is the insomnia which so soon exhausts the patient if it is not remedied; there is the loss of memory, especially of recent occurrences; and the lack of power of attention or concentration which prevents intelligent conversation. The indifference to bodily wants may be so great as to lead to uncleanliness, and since paralysis of the sphincter is the rare exception, incontinence is usually to be ascribed to the mental state. It is useless to attempt to get any reliable history of their illness from these patients. Their statements are unintelligible or unreliable. And here it may be well to notice a symptom first remarked by Strümpell.³ These patients will relate occurrences as having happened recently with much elaboration of detail, when as a fact the story is entirely a product of

their imagination. Thus one patient of my own who had been confined to bed for many days, told me one afternoon that she had been out to see an eminent gynecologist during the morning; had gone to his office and waited for him several hours; had seen other patients there, and finally had been told by the doctor's brother that he would not return in time to see her, so she had come home again. And this was all related in apparent good faith, so that I have no doubt that she believed that what she said had occurred. With the possibility of such delusions in view, it is evident that the statements of these patients cannot be accepted regarding anything, especially as to their own history.

One patient, who was admitted to Bellevue Hospital during my service there, told me a different history of her case every day for a week, and it was only by interviewing her friends that the correct account was obtained.

The course of alcoholic neuritis is quite uniform. After a sudden onset, the symptoms suddenly advance to a high degree, which is reached in a week or two from the beginning of the paralysis or ataxia. Then they may increase further, and cause death by respiratory paralysis. Usually, they remain stationary for a time, and then gradually subside, the entire duration being from two months to a year. Individual muscles regain their power, tone, firmness, and electrical reaction slowly, and during recovery the tingling and numbness in hands and feet may be severe. In a few cases the muscles become contractured, and permanent deformities, only to be overcome by long-continued massage, or by operative measures, develop. When the fact is considered that those who recover rapidly, rarely fail to resort again at once to the use of stimulants, and thus expose themselves to the danger of a relapse, the ultimate fate of the chronic cases is hardly more serious than that of those who get well.

As examples of the paralytic form the following cases are cited:

Observation IX.—A baker, aged forty-seven, phthisical, a moderate drinker, had suffered for several years from numbness of the hands and legs; and for a year before the acute invasion of his illness, from a slight weakness of the legs and uncertainty of motion in walking. This weakness became much worse during the spring of 1881, so that all summer he was confined to his room, though he managed to walk a little. In November, after an uneasy night, during which he was delirious, it was found that he could not move his legs at all, and that his arms were powerless. He was brought to the hospital November 25th, when a total paralysis, with atrophy and loss of tendon reflexes, was discovered in legs and arms, as well as slight disturbances of sensibility in the legs, consisting of a delayed sensation of pain. His mental condition was a weak one, but he answered questions rationally. The face was in no way affected. No involuntary evacuations. Electric examination showed a great diminution, and in many muscles total loss, of faradic excitability when the current was applied both to nerve and to muscle. With the galvanic current few contractions could be elicited by exciting the nerves, and by exciting the muscles the slow contractions characteristic of RD, as well as the predominance of AnCC over KCC, were

¹ Dejerine: Arch. de Phys. Normale, 1884. For other ataxic cases, see Dreschfeld, loc. cit.

² Brissaud: Des paralytiques toxiques, p. 31. Paris, 1886.

³ Strümpell, Arch. f. Psych. 1883, xiv. 339.

present.¹ The mechanical excitability of the muscles was not impaired. There were no pains. During the following three months there was little change in the condition, except that his mind was not clear, and that he told extraordinary stories of having been out walking, of having made purchases, etc., when, in fact, he could not move from the bed.

His pulse became more rapid during this time, averaging 120 per minute. In February, 1882, the legs had become cedematous, and there was marked analgesia in them, except on the soles of the feet, which were hyperalgesic; sensations of touch were, however, readily perceived. Though he had a sanguineous dysentery, there was no incontinence. On the 12th there developed suddenly great difficulty in respiration, due to suspension of all diaphragmatic breathing, and the next day he died. An ophthalmoscopic examination on the last day showed an atrophy of both optic nerves on the outer side of the eyes.

Autopsy: Brain and cord normal. No macroscopic changes in the nerves. A microscopic examination, however, showed the presence of a very high degree of degeneration and degenerative atrophy in the nerve-fibres. The myelin had divided in large and small drops containing fat-granules; the degenerated mass within the Schwann sheath, consisting of myelin and axis-cylinder, was seen in various stages of absorption, and in spots the empty Schwann sheath alone remained. No inflammatory exudation was present, and the endoneurium and perineurium appeared to be normal. The muscles showed evidence of degenerative atrophy. The anterior nerve-roots were normal.²

The lesion here resembled exactly that in Joffroy's case, already cited. It was similar in the following case:

Observation X.—Female, who had recently indulged in alcoholic excesses and had suffered from gastritis and delirium tremens; complained for some days of pain in her legs and numbness in hands and forearms. When seen by Dr. Webber the pains in the limbs were severe, and she could not turn in bed without help, her knees were drawn up, and attempts to straighten them caused pain. There was loss of power in extensors of the wrist and hands, and the fingers could not be shut perfectly. There was general tenderness over the muscles of the extremities, and pressure along the nerves was very painful. Her throat was sore, but she did not have diphtheria. She spoke in a whisper and with difficulty. Three days later anæsthesia of the feet and hands appeared, and the tendon reflexes were lost. The pain became so severe that morphine was given to control it. The paralysis became more complete, the anæsthesia increased, incontinence of urine and feces developed, she appeared to be very feeble, and respiration became wholly thoracic. Seventeen days after admission to the hospital she died.

Autopsy showed brain and cord normal. The chief nerve-trunks of the extremities, and the phrenic and pneumogastric were in a condition of degeneration, the distal ends being affected to a greater degree than the central portions. "The simplest change found was in

the medullary sheath at Ranvier's constrictions, without break in the axis-cylinder, and without increase of nuclei." In some nerves extensive degeneration was found, the medullary sheath being broken up into fatty fragments, the axis-cylinder discontinuous or destroyed, and the number of nuclei increased. In the fibres which were most altered was found an increase of nuclei; and apparently small masses of protoplasm, not nuclei, were tinted in the midst of the granular débris. Nearer the root of the nerves axis-cylinders were more numerous. In the sciatic the sections from the highest part of the nerve, which had been preserved, were still diseased in a small proportion of their fibres.¹

A very similar case, with the same changes in the nerves, is recorded by Müller.²

The following case, under my own care, terminated favorably.

Observation XI.—Male, aged thirty-six, a hard drinker, after an attack of gastritis became paralyzed suddenly in both legs. A few days after this, both hands became useless, so that he was completely helpless. His wife says that his memory is quite gone. On admission to Bellevue Hospital, September, 1880, seven weeks after the onset, he complained of pain in all four extremities, and of tenderness in the muscles and joints when these were handled. The upper extremities were almost totally paralyzed below the elbows, the only motion possible being a slight flexion of the fingers. There was wrist-drop on both sides. The lower extremities were totally paralyzed below the knee, and the feet hung down motionless. The muscles of the thighs were also affected, for although he could pull his legs up in bed, it was with great difficulty that they could be straightened out. All the paralyzed muscles were atrophied, and the faradic reaction was lost in the extensors and greatly diminished in the flexors. The galvanic reaction was not tested by me from lack of apparatus. Tactile sense was considerably impaired, but the senses of pain and temperature and muscular sense seemed to be natural. The knee-jerks were lost. When an attempt was made to have him stand, the feet were pushed out and the knees doubled under him at once. Fibrillary twitchings were very noticeable in the atrophied muscles, and a marked tremor of the tongue was seen. The facial and ocular muscles were not affected, and the special senses were normal. There was no incontinence of urine and no symptom of thoracic or visceral disease. His mind was much impaired. He talked in a rambling manner, laughed much, and could not fix his attention, and his memory was so poor that no reliance could be put in his statements. Under treatment by iodide of potash, and complete cutting off of all stimulants, he began at once to improve. In two months from the time of admission he was able to walk, and one month later he was discharged perfectly well.

These cases are sufficient to present a clinical picture of the symptoms and course of the forms of alcoholic multiple neuritis. The differential diagnosis, elements of prognosis, and means of treatment will be considered when other classes of the disease have been studied.

¹ RD = reaction of degeneration. AnCC = anode closure contraction. KCC = cathode closure contraction.

² Strümpell: Arch. f. Psych., 1883, xiv. 342.

¹ S. G. Webber: Arch. of Med., 1884, xii. 33-49.

² F. C. Müller: Arch. f. Psych., 1883, xiv. 3.

(b) *Multiple neuritis due to poisoning by arsenic.*¹ It has long been known that an occasional result of arsenical poisoning is the development of paralysis, but it is only within the past four years that the fact has been determined that the symptoms in these cases are due to an affection of the peripheral nerves. Had the fact of the peripheral origin of alcoholic paralysis not been already proven, it is probable that the theory so long in vogue, that arsenical nervous symptoms were due to spinal lesions, would still prevail. But there is such a similarity between the two sets of cases, that it is impossible to ascribe them to other than the same pathological condition. Autopsies in support of the position that the peripheral nerves are involved are few in number, but in several cases the lesion has been found. The observations on record of spinal lesions are, it is true, more numerous; but when these are compared it is found that different lesions have been discovered in different cases, so that there is no single pathological change in the spinal cord which is constantly produced by arsenic. Further, some of the changes described in experimental cases in animals (viz., vacuolization of cells) are due to imperfect hardening of the specimens. It must, therefore, be admitted that multiple neuritis may be due to arsenical poisoning.

The changes produced in the nerves are so exactly similar to those already described, that there is no need of a recital of the pathological process.

The nervous symptoms produced by arsenic have been thought to vary somewhat, according as the ingestion of the poison has been a sudden or a gradual one. Brissaud claims that if there is slow poisoning, as, for example, by the long-continued use of Fowler's solution, paralysis is rather the exception, and is not severe, it is diffuse and transient; while other symptoms, such as gastro-enteritis, trembling, delirium, and aphasia, attract the chief notice. If there is acute poisoning from an overdose of arsenic, he holds, on the other hand, that paralysis ensues either during the period of active symptoms of poisoning, or soon after. The observations of other equally careful authors do not entirely support this view of Brissaud; for in two cases of Dana, one of acute, the other of chronic poisoning, very similar symptoms of paralysis and ataxia developed.

The description which has been given of alcoholic paralysis might almost be repeated for arsenical paralysis. There is the same limitation of the affection to the muscles of the distal parts of the extremities, the extensors being chiefly affected, and the weak muscles are flaccid, soft, and atrophied. There is a partial reaction of degeneration. The tendon reflexes are abolished; skin reflexes are preserved. There is often a marked tremor. The paralysis may begin either in the feet or in the hands, is usually bilateral, but has been, in four cases, of the hemiplegic type. The same dropped wrist and dropped foot are seen as in alcoholic cases. Disturbances of sensibility are prominent symptoms;

burning, tearing, shooting pains; formication, tingling, muscular, and arthritic pains and tenderness are associated with hyperæsthesia, and this may be followed by irregular patches of anæsthesia. The muscular sense is usually impaired, and so much so in some cases that an attempt has been made to establish a distinct class of cases as arsenical ataxia, or pseudo-tabes arsenicale. In these cases the incoördination of hands and feet, Romberg's symptom, and an awkward gait are very noticeable, so that tabes may be suspected until the history makes the causation evident. In a case of Dana's the patient could not tell the position of his limbs or distinguish between weights differing one to forty. In Scolozouboff's case the walk resembled that described by Westphal in alcoholic tabes, and was easily distinguished from a real ataxic gait. Seeligmüller and Dana, however, affirm that the gait in their cases was like that of locomotor ataxia. Occasionally œdema of the extremities, cyanosis, unusual sweating, and extensive desquamation indicate an implication of vasomotor and trophic nerve-fibres. In the most severe cases contractures in a flexed position developed in the paralyzed limbs. The sphincters are never involved. The duration of arsenical paralysis is somewhat greater than that of ataxia. Either condition may last several months, but occasionally the recovery is complete in a few weeks. Frequently, after the power has returned, the patient suffers for months from numbness and tingling in the extremities which are sufficient, as in a case under my own observation, to interfere with the finer motions, to disturb the sleep, and to cause constant discomfort. According to Gerhardt's statement (cited by Dana), ninety-seven per cent. recover wholly.

(c) *Multiple neuritis due to poisoning by lead.* It is not my purpose to enter upon any description of the various forms of lead palsy, which are familiar to every practitioner. Nor is this the proper place for a discussion regarding the various theories of the pathology of the disease. It is only necessary to call attention to the fact that there are now on record a number of autopsies in cases of lead paralysis in which the lesion has been found in the peripheral nerves. In a recently published case of Schultze¹ there was found a very marked atrophy and disappearance of nerve-fibres in the trunk of the musculo-spiral nerve, below the point where the branch to the supinator longus was given off. This decreased in intensity centrally, so that at the brachial plexus no anomaly was found. It increased in intensity toward the termination of the nerve in the muscles. The spinal cord was normal. This is simply a type of a number of recently published cases. On the other hand, there are numerous cases of this disease in which decided spinal lesions have been found, so numerous that many writers always ascribe the disease to destruction of certain groups of cells in the anterior cornua of the spinal cord. It must be admitted, therefore, that in lead we have a poison which, under certain circumstances, affects the spinal cord, and under other circumstances produces neuritis. It may be claimed that the same is true of alcohol and arsenic, and in showing that these poisons can cause neuritis there is no intention of defending the position that they never affect the central nervous system. But it is important to notice that the central or-

¹ Scolozouboff: Arch. de Phys., 1884, p. 323. Imbert Goubeyr: Des Suites de l'empoisonnement arsenical, Paris, 1884. Seeligmüller: Deut. med. Woch., 1881, p. 185. Lancereaux: Gaz. Hebdom., 1881, p. 719. Jaeschke: Thèse, Breslau, 1882. Ueber Lähmung nach acuter arsenik Vergiftung. Levin: Schmidt's Jahrbuch, Bd. 165, S. 239. Da Costa: Phil. Med. Times, 1881, p. 385. C. L. Dana: Brain, Jan. 1887. Brissaud: Paralysies toxiques, Paris, 1886.

¹ F. Schultze: Ueber Bleilähmung, Arch. f. Psych., xvi. p. 791.

gans are rarely involved. The limitation of the neuritis in lead palsy to the motor nerves makes the clinical picture in some cases resemble closely that of spinal disease. In illustration of this the following case is cited:

Observation XII.—A male, aged thirty-six, by occupation a dyer, had suffered from numerous attacks of lead colic, followed by general muscular weakness, which on one or two occasions was so great as to be a general paralysis rather than a simple weakness, and had finally developed a paralysis of the extensors of arms and legs, when admitted to the hospital, where he spent the last three years of his life. During this time his paralysis varied somewhat in degree, but was never entirely recovered from. The muscles affected were the extensors of arms and legs. These were much atrophied, and showed a loss of faradic reaction, and a characteristic change in the galvanic reaction, the anode producing stronger contractions than the cathode, and all contractions being slow. There was also a considerable degree of œdema in the extremities, especially in the legs. Spasms in the unparalyzed flexors occurred on one occasion for one day. The patient suffered also from the symptoms of cardiac disease and phthisis, to which he finally succumbed.

The autopsy showed no changes in the brain or spinal cord. The muscular branches of the peripheral nerves, although presenting no macroscopic changes, were found in a state of extreme degeneration when examined microscopically. Side by side with normal fibres were to be seen fibres, unstained by osmic acid, wholly destitute of myelin sheath. There was no fatty degeneration. Between the fibres a thick, finely fibrillary connective tissue, with many cells, was found. Transverse sections of the nerve trunks showed a large number of small fibres scattered among the normal fibres, but not collected into bundles, and it was often difficult to distinguish naked axis-cylinders from connective-tissue fibres. The lesion was an increase in the connective tissue of the endoneurium with simple atrophy of the nerve fibres of different grades.¹

But in a certain proportion of the cases of lead palsy there are marked sensory disturbances, consisting of severe pains, and anæsthesia, with numbness. In these it is possible, especially if tenderness along the nerves and in the muscles is present, to make the diagnosis of multiple neuritis. The history of the following case, under my care, coincides so closely with that of other toxic cases of neuritis that the diagnosis could not be mistaken.

Observation XIII.—Male, aged thirty-eight, after suffering from an attack of lead colic, began to feel numbness and pain in his legs and feet, which soon extended to his hands and forearms. This steadily increased for two weeks, and to it was added paralysis of the extensors of both hands and both feet, so that at the end of that time he was unable to use his hands or to stand. With the paralysis there was a rapid atrophy of the muscles, and a decline in the faradic excitability. The muscles became more and more tender, and the spontaneous pains gradually increased until it was necessary to use opium freely to quiet them. By the end of a month a well-marked anæsthesia had developed

below the knees, and it was noticed that the atrophied muscles were in a constant tremor. There were wrist-drop and foot-drop on both sides, and all reaction to faradism ceased. It required a very strong galvanic current to produce contraction and ACC was greater than KCC. The knee-jerk was preserved. The muscular sense was impaired. For five months his condition remained stationary, in spite of treatment by strychnia, iodide of potash, massage, and electricity. Then a gradual improvement set in, the pains became less severe, sensation returned, the muscles regained their contour and strength, and, finally, the electric contractility returned to the normal standard. About a year from the onset of the symptoms the recovery was complete.

(d) *Multiple neuritis from poisoning by sulphide of carbon*¹ and from illuminating gas has been suspected, and the similarity of the symptoms in such cases to those already described is quite remarkable. But as there are no autopsies to substantiate the theory, this cause is merely mentioned.

(To be continued.)

ORIGINAL ARTICLES.

IS THE DANGER FROM POST-PARTUM HEMORRHAGE INCREASED BY THE USE OF ANÆSTHETICS DURING PARTURITION?²

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THE affirmative answer to the question which forms the title of this paper was one of the most effective arguments urged against the use of anæsthetics in midwifery nearly forty years ago by men of such obstetrical eminence as Tyler Smith, Robert Barnes, and many others. It carried great weight, as it seemed obvious that an agent which paralyzed sensation, and, if carried to its full effect, equally paralyzed voluntary motion, must inevitably arrest that muscular contractility which is the essential condition for preventing post-partum hemorrhage.

The influence of this impression is seen in the fact that nearly all works on obstetrics, even by the most recent authors and many writers in medical journals, refer to the danger of anæsthetics in causing post-partum hemorrhage. Barnes, for example, speaks of anæsthesia induced by chloroform or ether, as among the most efficient causes of post-partum hemorrhage.

These warnings work for good in so far as they lead obstetricians to take those precautions which I believe to be a duty in every labor, to prevent this appalling accident, for it is my firm belief that no woman under the care of a watchful, prudent, and competent obstetrician ever ought to die from post-partum hemorrhage, due solely to uterine inertia or ataxy.

This paper will only refer to hemorrhage from this cause, as no one will assume that anæsthetics can produce those local lesions which we all know sometimes cause terrific and even fatal hemorrhage.

¹ Ross: Medical Chronicle, January, 1887.

² Read before the Medical Society of the State of New York, Albany, February 1, 1887.

¹ Eisenlohr: Deut. Arch. f. klin. Med., 1880, xxvi. p. 543.

No one can doubt that either chloroform or ether may be given to the extent so far beyond anæsthesia as to induce profound narcosis, or that, if the uterus be suddenly evacuated while in this condition, there would be a temporary paralysis of the organ with a loss of power to contract and close the open mouths of the uteroplacental vessels.

The real question is whether anæsthetics, properly administered, should be withheld from a woman in labor, when desirable to save her from unnecessary suffering, on account of the danger of their causing post-partum hemorrhage.

I may here say that I have long regarded chloroform as the best and safest anæsthetic in obstetrics, and that since 1850 I have used no other.

My reasons for this preference are briefly these:

1st. Its odor is to most persons much more agreeable, and it is much less persistent. When sulphuric ether is used, it frequently, at first, produces more or less irritation of the fauces and bronchi and an annoying cough or choking is excited. The effect of this is bad, both on the patient and on the surrounding friends. It excites apprehension which more or less tends to counteract the influence of the agent.

2d. The influence of chloroform is much more rapid and a much less quantity of this agent is required than of the ether. We are thus saved, in a great majority of cases, the preliminary stage of excitement which the ether produces, and we are able to use the chloroform for each recurring pain, the patient in the interval being comparatively free from the influence of the anæsthetic. Thus, in the aggregate, not only is a much less quantity of the agent required, but the patient is exposed to the danger from the anæsthetic, if any danger there be, for a much shorter period of time.

3d. By chloroform we are able to regulate the degree to which we may desire to carry anæsthesia with a certainty and security that are not possible with the ether.

4th. The danger from anæsthesia by ether, where disease of the kidney exists, first pointed out by my friend Dr. Thomas Addis Emmet, and now confirmed by several observers, has not been noted by any one as resulting from the use of chloroform.

We all know that the great security against post-partum hemorrhage lies in the efficient and permanent contraction of the uterus after delivery.

While we are constantly meeting in obstetrical literature with the statement that the danger of post-partum hemorrhage is increased by the use of anæsthetics, I have never been able to find any statistical evidence in proof of the assertion. What is termed uterine inertia is often but another name for uterine exhaustion, and this must certainly be much less likely to occur when the nerve force and vital powers have been saved by the use of an anæsthetic.

This uterine exhaustion may be and often is the result of a prolonged labor, and while I am convinced that the effect of chloroform is often to prolong labor, I have not been satisfied that this apparent objection was not more than counterbalanced by the advantages obtained by its use, even where the use of the forceps has been made necessary from this cause.

But in a large majority of patients my experience would lead me to the conviction that the use of chloroform shortens the labor. I am certain that it does in all those cases where the pains are diminished or suspended by extreme sensitiveness and fear of pain, by vivid moral impressions or hysteria, or by pains resulting from the coincidence of some malady, either existing antecedent to, or appearing during labor, such as rheumatism of the uterus, or other muscular tissues, or sharp pains in the back or abdomen distinct from the pains from uterine contractions, gripings in the intestines, or the cramps which are occasionally produced by the pressure of the child's head on the sacral nerves; and, finally, in all those cases where inefficient uterine action results from loss of sleep and extreme exhaustion from a prolonged first stage; and in many cases where the labor is retarded by rigidity of the os uteri or perineum. Thus, on the whole, I am obliged to state my conviction that chloroform accelerates labor in a greater proportion of cases than it retards it.

I have attended a number of patients who in previous labors have had their lives endangered by post-partum hemorrhages, and who were placed under my care for this reason. All these cases I have watched with the greatest anxiety, and have endeavored to see that they were in such a condition as would best prevent the occurrence of this accident after delivery. On questioning them or their intimate friends, or, where practicable, their former medical attendant, I have learned that their previous labors have almost invariably been followed by great prostration, and that when labor was completed they were in a state of almost extreme exhaustion. A peculiar idiosyncrasy, or a former tendency to hemorrhage, or an extreme feebleness of the patient, has been assigned as the reason why chloroform had not been given in former labors; the very reasons why I should consider this anæsthetic, properly and watchfully administered, as especially indicated. Such patients have generally remarked to me, when they have come out from the influence of the anæsthetic, "How different I am from what I ever was before, after confinement." They take nourishment and stimulants, if need be, and I then feel warranted in assuring them that all danger of "flooding" has passed, but I never leave them until I am certain of the fact. When I do leave, I give emphatic directions to the nurse for close watching and minute instructions as to what she shall do if there be the least threatening of hemorrhage.

Some years ago, this subject came up for discussion incidentally before the American Gynecological Society,¹ in which one of my most valued friends, and certainly one of the most able writers on certain obstetrical subjects, expressed great surprise at statements of mine like those just made, for the previous winter I had been called to see a case in consultation with him on account of post-partum hemorrhage, which he regarded as due to the inhalation of chloroform. At the time, from the history then given, it was my conviction that the hemorrhage was the

¹ Transactions, vol. vii. p. 78.

result of a very inefficient and partial use of the anæsthetic, as the patient, a very nervous, excitable woman, was extremely intolerant of pain, and, in consequence, she was never aided by the accessory muscles—and after several hours he was obliged to use the forceps. The hemorrhage which followed was the result of uterine exhaustion, due partly to emotional causes and partly to the fatigue of a prolonged labor. Three years after, by reason of the death of my friend, I attended this same patient in her second confinement. She was so sensitive to pain which bore no relation to the force of the uterine contractions, that, early in the labor, I gave her ten drops of Magendie's solution with the effect of quieting her, but regular labor pains did not follow.

She was extremely apprehensive of danger from the inhalation of chloroform. After watching her ineffective labor for some hours, I persuaded her to make only one full inspiration of chloroform to relieve the next pain. She was ready to make two inspirations with the next, and three with the next, and soon came under its full influence during the pains, but was perfectly conscious for a moment or two during the intervals, until with the return of a pain she would very impatiently call for the chloroform. After this the labor went on regularly and rapidly, so that the child was born within one hour after she commenced the inhalation of the chloroform, and the delivery was followed by perfect uterine contractions and no hemorrhage. Her convalescence was in every respect most satisfactory.

In the discussion alluded to, my friend expressed the opinion that danger of hemorrhage did not follow the use of sulphuric ether. I have never seen hemorrhage follow the use of either agent (I have never used ether in obstetric practice since 1850), but I should reason *a priori*, that an agent which paralyzed the nerves of the uterus and thus prevented its permanent contraction, would be dangerous in exact ratio with the continuousness of the effect, and that an agent, the extent of the anæsthesia from which is perfectly under the control of the administrator, the effect of which is intermittent and which is only used during the time of pain, would be safer.

The danger of post-partum hemorrhage in patients with cardiac disease is known to all. It seems to be almost accepted as an axiom with both the profession and public, that the inhalation of chloroform is dangerous for any woman with "disease of the heart."

For more than thirty years I have been convinced that this opinion is quite erroneous, and I have so taught in my lectures and in former writings.

In March, 1853, I was called to see the wife of a physician in this city in her fifth labor. I had seen her once before, the latter part of the previous December, with the late Professor Chandler R. Gilman, to decide as to the propriety of the induction of premature labor, as she was suffering from severe cardiac troubles.

She had been repeatedly examined by Dr. Alonzo Clark, whose diagnosis was, great dilatation of the left ventricle and mitral insufficiency. We were then in full accord that the induction of premature

labor would be unsafe. When labor came on, I was sent for, as Dr. Gilman was ill. When I saw her she had been in the second stage of labor, as her husband said, about one hour. The first stage had been nearly four hours, unattended by any symptoms to cause grave anxiety, but when the expulsive pains began, her condition became rapidly bad. Each pain, which recurred every six minutes, caused faintness, nausea, and slight vomiting, but the pains were much more severe in the chest than in the uterus. Her appearance was appalling, the countenance was extremely pallid, the lips and fingers were cyanosed, the face was covered with large drops of perspiration, and the pulse very weak and irregular. The os was nearly dilated, very soft and yielding, the membranes protruding, but the pains very ineffective. After watching her for a few moments, I regarded her condition as perfectly hopeless and proposed chloroform, solely in my own mind, with the hope of euthanasia. Her husband would not consent to this, making the objection that she could not bear an anæsthetic, as she had once inhaled ether to have a couple of teeth extracted, with very dangerous results. I then gave her five drops of Magendie's solution of morphia, which was followed for a time by some improvement. But soon after her condition became as bad as before, until I could not bear to witness her suffering any longer and avowed my intention of leaving, as I could be of no service. Her husband begged me to stay, adding, "Do what you think best and God help you."

The few moments that we had to wait before the chloroform could be obtained, seemed to me so many hours, which I passed in trying to get her to swallow some brandy and water, to which she had a great aversion, and in explaining to her exactly *how* I wished her to inhale the chloroform; I began by giving a few whiffs first, as an impending pain was apparent, gradually increasing the amount until she became unconscious during the pains. She was always conscious some time during the interval between each pain.

After a short time, a wonderful change was apparent, her pulse became regular and stronger, while her husband, who frequently counted it, said that it never exceeded 96 a minute; while, before my arrival, it had been 140 in the intervals, but could not be counted during the pains. Her countenance improved in color, and assumed a most placid, contented expression.

During the pains there was no voluntary assistance on the part of the patient, and but slight aid from the accessory muscles. After she had been taking the chloroform an hour the membranes ruptured, and finding the head low down in the pelvic cavity, the position favorable, and the soft parts yielding, I said to the husband, "What is the use of letting her suffer more fatigue? The forceps can be applied with great ease, and may shorten the labor two or three hours." It was applied, without changing her position in the bed, and in a few minutes she was delivered of a living girl, weighing six pounds and a half. She made a very good convalescence.

In January, 1856, I again attended this lady in

confinement. For the three months previous, I had seen her often and had endeavored to lessen the labor of the heart by improving the character of the blood which it circulates by such medicines as the tincture of the chloride of iron, the chlorate of potassium, and digitalis. The labor was short and comparatively easy under chloroform and delivery by the forceps. She outlived her husband three years, but died in July, 1860, from Bright's disease and her cardiac troubles.

Since this case I have seen several others in which labor was dangerously complicated with heart troubles, and which terminated favorably, as I think, solely from the use of chloroform.¹

So far as I know, these views which I have long taught, have been advocated by no author until the publication of the valuable work by Dr. Angus MacDonald, of Edinburgh, in 1878. His explanation of how the uterine contractions of the second stage, where heart trouble exists, cause the dangerous symptoms of violent palpitation, dyspnoea, syncope, etc., is most satisfactory to my mind.

An interesting paper on this subject by Dr. J. L. Owen, appeared in the *New Orleans Medical and Surgical Journal*, in 1881.

There are so many important papers to be read before the Society that it would be wrong for me to occupy its time longer. I will, therefore, close with a statement of my personal experience in the use of chloroform in parturition.

During the past thirty-seven years I have rarely attended a woman in confinement without the use of chloroform—never where she has suffered considerable pain. Having thus used it, in several thousand cases, I unhesitatingly assert that not in a single case have I ever found reason to regret its use.

In addition to my own experience, I have carefully watched for all that has been published on this subject, and I am fully in accord with an eminent authority on obstetric anaesthesia, Dr. J. B. Reeve,² of Dayton, Ohio, in his assertion that

"The most rigid scrutiny, inspired by hostility, has failed to show that, when judiciously used, it exerts any injurious influence on the mother or child.

"Chloroform has been used in natural labor many hundred thousands of times, yet but a single case of death is on record, when it was administered by a competent medical man, and in this there is lack of post-mortem confirmation."

I would add, that in this case the death was preceded by a convulsion.

In my private practice, I have never had but one case of post-partum hemorrhage, and in this no anaesthetic had been used, as the child was born within five minutes after I entered the room, before I had time to make any examination, and a terrific flooding followed.

¹ I find the following sentences in the most recent work on obstetrics, a most interesting and valuable text-book by Dr. Parvin.

"Vergeley, quoted by Dutertre, states that cardiac diseases do not forbid the use of an anaesthetic in labor, and chloroform acts as a sedative in these affections, and may be given prudently. Barr believes that obstetric anaesthesia has a beneficial sedative action upon the heart." (*Science and Art of Obstetrics*, by Theophilus Parvin, M.D., LL.D., page 232. Phila., 1886.)

² Wood's Reference Hand-book of the Medical Sciences, Anaesthesia, page 195.

LARGE DOSES OF IODIDE OF POTASSIUM IN A CASE OF PROBABLY SPECIFIC BRAIN TUMOR.

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M. J. K., aged sixteen, applied to me November 24, 1885, with the following history: When a child she was struck in the right eye, and has never been able to see out of it since, and now has barely light-perception. The left eye has failed so that she has not been able to read for the past two months. She states that once before she lost the sight of the left eye, so that she could not read, but the vision came back slowly, and after a period of six weeks she could read again.

The following is all the family history she knows: Supposes her father is living, but she has heard nothing of him for seven years; mother died of consumption several years since; had two brothers, both dying in infancy, one of "consumption," and one sister living and healthy. The patient herself is a stout, dark-haired, florid, well-nourished, well-developed girl. States that she has never menstruated. For two or three years past she has had violent attacks of headache, coming on two or three times weekly, accompanied with vomiting. For the past two months she thinks the headaches have not been so severe, but the failure of vision has come on with the subsidence of pain. She has somewhat of a staggering gait in walking, and often has dizzy spells. The ophthalmoscope shows extensive choroidal changes in various parts of the fundus of the right eye, and particularly in the macular region; atrophic changes of the optic disk, arteries thread-like, and a hypermetropia of about 7 D. In the left eye the disk is swollen, edges obscure, the vessels embedded in the cedematous papilla, and the mediae slightly hazy; hypermetropia of 3 D.; no choroidal changes. Vision equals $\frac{6}{36}$.

Two weeks later, December 11th, the patient was admitted into Charity Hospital, when vision had so far diminished that she had only light-perception in either eye; patellar reflex was very much decreased, and the difficulty in walking had greatly increased. She would stagger about, having a tendency to fall, and had frequent dizzy spells. Potassium iodide, gr. v, and hydrarg. bichloridi, gr. $\frac{1}{8}$, three times daily, were administered, the dose to be increased.

By the early part of January, 1886, the gait had become so much affected that she could not walk alone without falling, and frequently had attacks of tremulousness in which she fell to the floor, but did not have a regular convulsion, nor did she ever lose consciousness. These attacks were often very frequent, coming on several times a day. After these there was generally a good deal of pain over and back of the right eye.

The case continued in about this condition, or perhaps slowly became worse, until the latter part of January. At this time there appeared upon the right side of the head, and a little later upon the left side, in front of and a little above the ear, extending

from the zygoma upward into the temporal region, a peculiar swelling which rapidly increased. This gave a feeling like that of fluid under the periosteum, and, when pressed upon, a peculiar crepitant sensation like a soft-shelled egg when indented, or like parchment. When this swelling was pressed upon with the finger, and the finger suddenly removed, it returned to its original form with a sharp snap which could be distinctly heard at a distance of several feet. This condition lasted several weeks, and then slowly disappeared, subsiding entirely, leaving the region in its normal condition. Until the middle of March the condition of the patient remained much the same, or she became slightly worse. The general health was somewhat affected, she became pale, and her appetite impaired. The mercury had been continued until the gums were slightly touched, and tonics and good diet administered. The papilla of the left eye gradually but surely passed through the stages of optic neuritis, and terminated in an atrophic condition, with thread-like arteries, pale, contracted disk, and hopeless blindness.

Moderate doses of iodide of potassium and mercury pushed to its physiological indications not having produced any decided improvement by May 1st, I decided to push the iodide of potassium to the limit of tolerance. However, for ten days or two weeks before this, there had not been quite so much headache, and the nausea and vomiting had somewhat diminished. On May 3d the patient was ordered thirty grains of iodide of potassium three times daily, in plenty of water half an hour before her meals, the dose to be increased by five grains each succeeding day. By May 6th the dose had reached forty-five grains, and, as there were no indications of iodism, the dose was ordered to be increased by ten grains daily. By May 14th the patient had reached zij three times daily, with no iodism, and the dose was ordered to be increased by twenty grains daily. This was continued until the patient was taking ziii three times daily. By this time the potassium had produced some gastric irritation, and the patient complained of cramp-like pains in the stomach when the medicine was omitted. No other evidence of iodism appeared, except that the flow of saliva had slightly increased. From this time on the patient very materially improved in every way except vision, the restoration of which we had not hoped for. Until the present time there has been no return of the symptoms. She has had no headache, no vomiting, no staggering of the gait in walking, no attacks of tremulousness or dizziness; general health is excellent, and she feels in every way well. Her menstrual function has been established within the last two months. Her patellar reflex, however, remains somewhat diminished, and the optic atrophy is almost complete.

I call attention to this case with a twofold purpose. First, for the interest which is attached to the history of the case itself; and, second, as showing the extent to which the iodide of potassium may be pushed without deleterious effects.

The frequently recurring attacks of headache usually located in the right frontal region, the vomiting, the unsteadiness of the gait with attacks of tremors,

and a disposition to fall, the development of optic neuritis terminating in progressive atrophy, and rapid and complete loss of sight, all point unmistakably to a tumor of the brain. Of the cause and location of the tumor we have no certain knowledge. Two points, however, strongly indicate a specific origin. The first is the family history, and the second is the therapeutic test. While the tolerance of large doses of the iodides does not infallibly demonstrate a specific state of the system the presumption in favor of this view is very strong.

So good an authority as H. C. Wood,¹ states that "if sixty grains of iodide of potassium per day fail to produce iodism, for all practical purposes, the person may be considered a syphilitic." Besides, another recent authority² states that "of all brain diseases occurring between the ages of twenty-five and forty years, probably eighty per cent. are due to syphilis." It would have been an easy matter for this case to have been infected in childhood, and, considering the uncertain moral element surrounding her youth, it is not at all improbable. One point which should be emphasized in connection with brain tumors, is the very frequent involvement of the visual apparatus.

In an article on "Brain Tumors" in Pepper's *System of Medicine*, Drs. Mills and Lloyd report a series of one hundred cases of tumors of the brain in which autopsies were made and the tumors located. Of these one hundred cases, fifty-one had impairment of vision or optic neuritis, and twenty-six had some affection of the muscular appendages of the eye. In other words, no less than seventy-seven per cent. of these cases showed decided eye symptoms, while several others either died suddenly, leaving no opportunity for an examination, or else the eye symptoms were not noted.

The most interesting feature of this case, however, has been the remarkable tolerance of the iodide of potassium. So far as I have been able to find in the literature on the subject, at my disposal, no such dosage has been reported. While there is little or no danger of death from this salt, yet the symptoms often engendered by it are so disagreeable and annoying as not to be desirable.

In the cases³ where death has occurred after the administration of this salt, it has been used in combination with the chloride, which together form an irritant and poisonous iodate of potassium. H. C. Wood⁴ recommends the iodide in doses of one to three drachms daily in cases of syphilitic affections of the brain, while Bumstead⁵ states that he has given as high as two drachms three times daily with impunity.

De Wecker⁶ urges the use of large doses if smaller ones do not produce the desired effect, and advises ten to twelve grammes (154-186 grains) to be given daily.

The U. S. Dispensatory⁷ states that the dose may

¹ Pepper's *System of Medicine*, page 1013.

² Julius Althaus: *THE MEDICAL NEWS*, 1886, page 422.

³ Wharton and Stillé's *Med. Juris.*, 4th ed., vol. ii. p. 137.

⁴ Pepper's *System of Medicine*, vol. v. p. 1016.

⁵ Bumstead on Venereal Diseases, 3d ed., p. 509.

⁶ *Ocular Therapeutics*, Eng. ed., p. 425 *et seq.*

⁷ U. S. Dispensatory, article on Potassium Iodide.

be up to six drachms daily, and that Dr. Buchanan, of Glasgow, has given half an ounce at a single dose with no deleterious effect, but this latter dosage was not continued for any length of time.

The lesson we may learn in this connection is, that whenever tertiary syphilis is present in any form, and we do not get satisfactory results from small or moderate doses of the iodide of potassium, the case should not receive an unfavorable prognosis until this salt has been pushed to the utmost limit of its physiological tolerance. We will often get surprising results from this method, and not to be obtained in any other way.

In the administration of the iodide of potassium the use of the following formula will be found convenient:

R.—Potassii iodidi ℥j.
Aque distillat. q. s. ad ℥j.—M.

"Of this solution one minim equals one grain of the salt, but it should be remembered, however, that one minim equals about two drops. The disagreeable taste is best concealed by adding to the dose one or two teaspoonfuls of the compound syrup of sarsaparilla, and it should always be freely diluted with water.

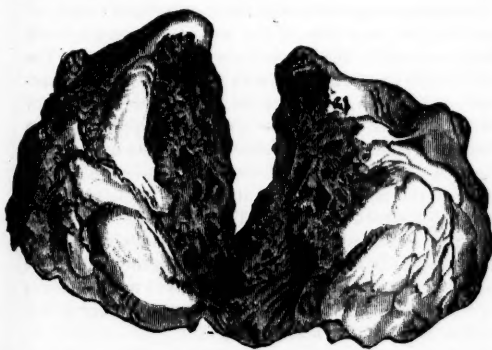
A CASE OF PRIMARY SARCOMA IN THE ANTERIOR MEDIASTINUM.

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THE case upon which this paper is based is that of Mary B., æt. seventy years, who was admitted into the Philadelphia Hospital June 26, 1886, suffering from uræmia, from which she died June 29, 1886.

At the post-mortem examination the body appeared well nourished. The lower limbs were oedematous. The point of special interest centred in the discovery of a large tumor which occupied the anterior mediastinal space.



The mass weighed fourteen ounces, it was six inches long by five inches broad and four inches in diameter. It was about the size and shape of the average normal heart. It presented a reddish-white, fleshy appearance, and was quite soft and pulpy in consistence. The tumor was situated immediately behind the upper piece of the sternum. It conse-

quently overlaid the aorta and pulmonary artery with the other structures lying in the deeper mediastinal spaces—it also encroached upon the left thoracic cavity. The upper lobe of the left lung was pushed aside by the mass in a direction outward and backward. The lobe was splenified and the lower lobes of the lungs on both sides were somewhat congested. There were only a few slight adhesions between the tumor and the visceral layer of the pleura of the upper lobe of the left lung. The tumor was not in any manner attached to the sternal or costal bones. The bronchial glands in the anterior mediastinum were slightly enlarged, but the glands at the roots of the lungs were normal. The remaining structures in the thorax, including the heart, were normal. The kidneys presented the usual appearances characteristic of the granular contracted organ. The capsules were adherent and numerous cysts studded the cortical portions. The uterus was covered with fibroid growths, and the ovaries were calcified. The liver and spleen, with the other abdominal viscera, were carefully examined, but nothing of an abnormal character could be discovered. A biliary concretion was found embedded in the intestinal mucous membrane just below the opening of the gall-ducts. The brain and its membranes were examined, but nothing of an abnormal character was detected.

The specimen is, therefore, of special interest because it is an example of a case of primary sarcoma of large size located in the anterior mediastinum without any secondary formation. As already stated, none of the lymphatics in the mediastinum were enlarged, and the growth seemed to have originated in the pleura of the anterior mediastinum. The results of microscopic examination would class this tumor with the small round-celled sarcomata with a tendency to alveolar formation.

The clinical features peculiar to this case, although by no means unique, yet deserve consideration:

1st. The morbid growths in this region of the body are usually sarcomatous.

2d. The age of the patient, which was advanced, is an unusual and yet recorded coincidence in tumors of a sarcomatous nature in this location.

3d. The absence of wasting and cachexia. The patient's appearance was that of a person in average health. This peculiarity is also not remarkably exceptional in this class of cases.

4th. The almost entire absence of any subjective symptoms pointing to the morbid growth. The patient was under observation but a few days before her death. She complained of slight cough and dyspnoea, and auscultation of the chest revealed feeble respiration over the posterior portions of both lungs, also anteriorly over the left apex.

There was dullness on percussion over the sternum, and some four finger-breadths to the left of the sternal margin; but when these physical signs were detected the patient was near her death, and their true significance was not established.

The patient came to the hospital for treatment of symptoms which were plainly dependent upon renal disease, such as albumen with casts in the urine; increased arterial tension; with nervous symptoms

usual to uræmia, which was the immediate cause of death. As the patient had worked as a domestic until shortly before applying to the hospital, it is fair to assume that there were no important subjective symptoms to call attention to the thoracic mischief.

5th. The foregoing statement is in consonance with the history of anterior mediastinal growths, which are much less likely to occasion severe pressure symptoms than tumors originating in the other mediastinal regions.

6th. While the diagnosis in this case was not established during life, and while the case represents very forcibly the slight disturbance of the economy which may accompany certain of these mediastinal growths, and particularly those occupying the anterior mediastinum, yet it is quite probable that had there been opportunity for a more thorough and prolonged study, the diagnosis might have been established. The dulness over the left sternal region, the distant and feeble heart sounds and weak respiratory murmur over the left apex with the dyspnoea were certainly suggestive symptoms.

MEDICAL PROGRESS.

ASEPTOL: A NEW DISINFECTANT.—This substance is orthophenol-sulphuric acid, and has been known since the year 1841. It has been lately brought forward in France as a disinfectant, and Dr. Hüppe (*Centralb. f. d. Med. Wiss.*, No. 50, 1886) has made experiments with it, which have led him to the opinion that it possesses advantages entitling it to rank beside carbolic acid and bichloride of mercury. Commercial aseptol is a syrupy liquid, having a faint odor of carbolic acid. It is soluble in all proportions in water, alcohol, and glycerine, and even in a 10 per cent. solution has no caustic action upon the skin. Such a solution kills spores of anthrax in thirty minutes, whilst a 5 per cent. carbolic acid solution requires at least twenty-four hours to produce the same effect. A 3 or 5 per cent. solution of aseptol is a true disinfectant for spore-free microorganisms, or for such as do not form endogenous spores. A 3 per cent. solution was found quite sufficient to disinfect the (previously cleaned) hands. Solution of aseptol in alcohol, glycerine, or oil (in the last named no permanent solution takes place) showed no disinfectant power. By heat it is changed into the corresponding para-combination.—*British Medical Journal*, Jan. 1, 1887.

POISONING BY MUSHROOMS.—After mentioning the poisonous substances which have been found in the deadly variety of these plants, BENGNIÈS-CORBEAU describes the treatment of poisoning which occurs from their ingestion as follows:

The emptying of the intestines, by ipecac or castor oil. Stimulants, warmth, and friction. Subcutaneous injections of ether have been of great service.

The use of the following has also been beneficial:

Ammonii acetat.	3ijss.
Aquæ chloroformi	3j.
Tr. opii	gtt l.
Syrup. menthæ piperitæ	3jss.
Aquæ	3vjss.—M.

Tablespoonful every half hour, or hour, as needed. Also,

Syrup. morphiæ	3x.
Syrup. ætheris	3v.
Aquæ	3vj.—M.

Tablespoonful every hour.

The administration of isolating and neutralizing remedies: among these are albuminous liquids; milk; lemonade, containing eight grains of tannin to the quart, or fifteen grains of iodide of potassium.

As physiological antidotes, we find muscarine and atropine, administered in the order named, and in doses to secure the full physiological effect these remedies offer the best hopes in treatment.

Siccard has treated dogs by subcutaneous injection of pilocarpine in doses of one-sixth of a grain, supplemented by energetic friction; the injection was repeated in half an hour, given over the heart. As soon as deglutition was possible, a drink of marshmallow water and potassium nitrate was freely given. Recovery followed this treatment.—*Revue de Thérapeutique*, January 18, 1887.

ANTI-PARASITIC INJECTION FOR BLENNORRHOEA.—DELPECH treats blennorrhœa with the following injection:

Peptone, mercurial	gr. 3.
Aquæ destill.	3vj.

Injection is made, morning and night, as follows: the liquid is twice injected and at once expelled; the third time it is allowed to remain two minutes. The peptone compound employed is one-fourth part sublimated.—*Les Nouveaux Remèdes*, December 24, 1886.

A NEW "CURE FOR CANCER."—DR. VELLOSO lays claim to having cured several cases of epithelioma of the face and lips with the juice of alvelos, a plant which belongs to the family of Euphorbiaceæ. It acted as an irritant, and destroyed the diseased tissue, which was quickly replaced by healthy granulations. Of the three different kinds of alvelos (male, female, and wild), the second is considered the most efficacious. It is found at Pernambuco, and although the natives have employed the juice for some time, it has not come into extensive use on account of the severe pain which it causes. The best results were obtained with the juice in a concentrated solid form, and with the addition of vaseline or lanoline. This preparation should be applied with a brush to the affected part (previously washed with a solution of carbolic acid), which should then be left exposed to the air for at least an hour. It should afterward be covered with lint. This treatment should, as a rule, be repeated every two or three days, and never more than once in twenty-four hours, as the pain of the application is severe. The treatment was more speedily successful when begun before ulceration had occurred.—*British Medical Journal*, Jan. 1, 1887.

MICROORGANISMS IN THE BLOOD; SPREAD OF EPIDEMICS.—An important paper was published by Wysokowitsch on the fate of microorganisms when injected into the body of warm-blooded animals. In 1874, Traube and Gscheidlen found that, if a quantity of putrid fluid were injected into the blood of rabbits and dogs, and the blood taken twenty-four hours later, with

aseptic precautions, no organisms developed in it, showing that the bacteria introduced had disappeared from the blood, or had been destroyed in it in that short time. Some years later, Watson Cheyne found also that saprophytic bacteria, when injected into the blood-stream of rabbits, disappeared from the blood in twenty-four or forty-eight hours, and he concluded that they had been destroyed in it. Pursuing the subject further, he found that if larger quantities were introduced, along with the fluid in which they grew, they were able to survive for a longer time, and that the same was the case with smaller quantities, if the animals experimented on had been previously weakened in health by the administration of repeated doses of phosphorus or other poisons. He explained this fact on the supposition that the products introduced with the larger quantities of putrefying fluid, or the poisons previously administered, had so weakened the vitality of the blood and tissues that they were no longer able to destroy the bacteria. Wyssokowitsch has repeated the experiments, and has come in the main to the same conclusions as Watson Cheyne, but he has added several interesting observations. In the previous researches, mixtures of bacteria, probably not containing spores, were employed; but Wyssokowitsch used pure cultivations of known organisms, and found that, while sporeless bacteria were rapidly destroyed, the spores could retain their vitality in the body for a long time, and remained in the tissues in a dormant state. In both cases, the blood very rapidly became freed from organisms, but the spores were deposited chiefly in the liver, spleen, and medulla of bone, and were apparently taken up by the endothelial cells of the capillaries, in which they were found embedded many days after their introduction. In one case a few spores of bacillus subtilis were found alive in the liver seventy-eight days after their injection, although none was present in the other tissues or organs. Wyssokowitsch's results with pathogenic organisms are very interesting. When only a few anthrax bacilli were injected, they disappeared from the blood almost completely for some hours, but after twenty-four hours they began to appear again, and increased in number till the death of the animal. When they were introduced in large numbers, this disappearance from the blood was not very marked. Apparently all bacteria tend to be deposited in the organs before mentioned, and in the case of non-pathogenic organisms are there rapidly destroyed unless spores are present. In the case of pathogenic bacteria, this deposit and destruction of the organisms is incomplete, and they very soon gain the upper hand, and again spread into and multiply in the blood. We have thus in the structure of the vascular walls, and especially in the endothelial cells of the capillaries, a protective arrangement against any bacteria which may find their way into the blood. These organisms are deposited and retained in or between the endothelial cells of the capillaries, especially in the organs in which the circulation of the blood is slowest. Then begins a battle between the cells and the bacteria, which results either in the destruction of the bacteria or of the cells, which in the latter case provide a pabulum for the further development of the organisms. Those bacteria which, as a rule, gain the victory must be looked on as specific bacteria, pathogenic for the class of animal experimented on.

Although in many cases it is now definitely proved

that the microorganisms present are the cause of the disease, very little is known as to the modes of infection and the spread of epidemics, and accordingly the attention of several investigators has been attracted to this question. In the case of several diseases, such as anthrax, typhoid fever, cholera, etc., Pettenkofer has strongly advocated their relation to the soil. He holds that a certain local and seasonable condition is essential to the spread of these diseases, and finds these two factors in a porous material, the soil penetrable by air and water, and soaked with organic substances (local predisposition), and in variations in the moisture and temperature (seasonal predisposition). He teaches that the so-called contagious miasmatic infective diseases are in reality true miasmatic or soil affections. The virus is formed outside the body. The virus, x , leaves the body in an inactive condition; outside the body, in the ground or in a suitable substitute, something, y , is added to this inactive germ, and out of this combination, which occurs only outside the body, that is, out of x and y , is formed the infective germ z . That this supposition is in part wrong, is now proved as regards anthrax and cholera, by the fact that the intestinal discharges from animals suffering from these diseases are capable of giving rise to them in another animal, showing that the infective material leaves the body in a thoroughly active condition. Nevertheless, when these and other similar diseases occur in an epidemic form, it must be admitted that there is some relation between the soil and temperature, and the spread of the disease. What this relation is has been the subject of investigation by Soyka, Hueppe, and others. Soyka has examined the relation of bacteria to soil, taking especial note of the effect of moisture, temperature, and air. He finds that when anthrax bacilli are placed on soil they rapidly develop spores, and thus provide for their future propagation, and that the rapidity and certainty with which this occurs depend on the degree of moisture, on the temperature, and on the access of air. The necessary conditions are present in nature during the greater part of the year, and it is in this way that the soil is so essential to the spread of this disease. For were it not for this effect of the soil, these bacilli would soon die out because they are quickly destroyed by the ordinary saprophytic bacteria, if they are not in the spore condition. The soil acts then not by adding to their virulence, but by providing against their destruction. Hueppe has made a special study of this matter in reference chiefly to an epidemic affection of deer caused by a small bacterium. Here Hueppe found that the only relation to the soil was, that the infection was generally intestinal, that the bacteria could vegetate luxuriantly outside the body, and were not killed in passing through the stomach. Pettenkofer looks on inhalation as the chief mode of infection, and in fact disregards infection through drinking-water. The researches of Hueppe and Soyka show that in this he is wrong, and that infection occurs probably most often through the food and drink. Each disease seems to have its special mode of infection, depending on the biological characters of the microorganism which causes it.—*British Med. Journal*, December 25, 1886.

MYOCTONINE.—The *Journal de Médecine de Paris* publishes the following note on myoctonine. Myocto-

nine is one of the two substances extracted from aconitum lycoctonum by MM. Dragendorff and Spohn. It is a yellow, bitter, amorphous body, having for its formula $C_{27}H_{30}N_2O_6$, and fusible at a temperature of from 143.5° to 144° C. It is not very soluble in water, but much more so in acidulated water, and soluble in all proportions in sulphide of carbon, absolute alcohol, chloroform, and benzene. Ether and the light essence of petroleum dissolve only traces of it. Myoconine is a powerful poison, resembling curare in its action. The injection of $\frac{1}{1000}$ of a gramme produced distinct toxic symptoms in a cat, while one-tenth of a gramme caused death in twenty or thirty minutes. Lycocotinine and lycaconine, which are products of the decomposition of lycaconitine and of myoconine, have a physiological action which recalls that of the primitive alkaloids, but less powerful.—*British Medical Journal*, Jan. 15, 1887.

TREATMENT OF CEREBRAL ANÆMIA.—DUJARDIN-BEAUMETZ advises the following regimen:

After each meal a teaspoonful of syrup of iodide of iron taken in seltzer water. On retiring, a teaspoonful of this mixture:

Potass. bromid.,	
Sodii bromid.,	
Ammonii bromid.	aa gr. xx.
Aquæ destill.	3i.

Two sulphur baths should be taken weekly; when the temperature of the external air will permit, cold douches should be substituted for the sulphur baths, followed by hot foot baths.—*Revue de Thérapeutique*, Jan. 1, 1887.

TREATMENT OF MALIGNANT PUSTULE.—Two methods of treating malignant pustule, for which the respective authors claim marked success, have lately been mentioned in Spanish journals. Dr. Avendaño, of Peru, makes a crucial incision, and applies the ordinary solution of ammonia to the cut surfaces with a brush, giving at the same time a mixture containing acetate of ammonia. Dr. Rivas, of Cartagena, applies to the affected part a paste composed of oil of turpentine and quinine. This latter is said to have been efficacious even in a case where it was applied by the patient himself without medical advice, after having seen the beneficial effects of the paste prescribed on a companion.—*British Medical Journal*, Jan. 15, 1887.

ANTI-NEURALGIC PILL.—The following is the formula of LABORDE:

Aconitinæ crist.	gr. $\frac{1000}{1000}$.
Quiniaz hydrobromat.	gr. jss.
Syrup. quinquinæ	q. s.

One pill may be taken every four hours, until five or six daily are taken; the frequency of the dose should be diminished as soon as the full effect is established.—*Revue de Thérapeutique*, January 1, 1887.

A SIMPLE CLASSIFICATION OF INSANITY.—DR. JOHN P. GRAY gave the following:

Mania, manifested by delusions of excitement, expansive ideas, exaggerations, self-consequence, incoherence, etc.

Melancholia, manifested by delusions of depressing character, painful ideas, and apprehensions.

Dementia, representing conditions of mental failure and feebleness of mental action.

All cases of insanity come under these three heads. Cases may be acute, subacute, chronic, periodic, paroxysmal, but they are mania, melancholia, or dementia.—*Med. Record*.

THE THERAPEUTICS OF WHOOPING-COUGH.—Last year MICHAEL, of Hamburg, originated a method of treatment by nasal insufflations of powders of pulv. resinæ benzoæ, chinin. sulph., and arg. nit. 1-10. Benzoin has an agreeable taste, no toxic effect, and is most serviceable. The author relates 250 cases in which this treatment was adopted. Of 100 carefully observed cases, 8 had no further attack after the first insufflation. In 3 of these there was a return and 5 were cured permanently. In 74 per cent. there was substantial benefit, no effect in 12 per cent., and increase of the cough in 14 per cent. 7 per cent. were cured in three days, 23 per cent. in less than twenty days; the rest occupied three to five weeks. In 20 cases there was improvement, with cessation of vomiting, epistaxis, and asphyxia. The best effects were observed in very new and very old cases. The duration of the treatment was fourteen days in 50 cases. The author's results are confirmed by the publications of Bachem, Guerder, Lublinski, Stoerk, and Ziem.—*Journal of Laryngology*, January, 1887.

AN APPLICATION IN BLENNORRHOEA.—UNNA applies the following, with a sound:

Ol. theobrom.	100 parts.
Ceræ flavæ	2 to 6 "
Argent. nitrat.	5 "
Balsam. Peruv.	2 "

Four or five catheterizations with a tin sound anointed with this mixture generally sufficed to cure chronic inflammations of the urethra; in some cases it was necessary to repeat the series of soundings several times, and in severe cases the injections of sulpho-phenate of zinc were also employed.—*Revue de Thérapeutique*, January 1, 1887.

PARTURITION AMONG THE SYPHILITIC.—COMBES, in 188 cases, found that parturition proceeded without fever in 141; in 35 cases fever occurred, but for reasons independent of the diathesis: in 12 cases the fever which occurred was distinctly referable to syphilis or its sequelæ. After a careful analysis of cases which had fever, the author distinguishes two as especially of specific origin.

Retention of the membranes occurred in 37 cases; traumatism, more or less severe, occurred in 47 cases; the placenta was found diseased in 25 cases; the cure or the amelioration of the specific lesions followed parturition in 38 cases.

Among children the results were as follows: With the mothers who had no fever living children were born in 65 cases; 17 were stillborn; 59 were macerated, and 17 died ten days after birth.

Among the women who had fever 23 living children were born; 2 were stillborn; 15 were macerated, and 3 died ten days after death.

In the 188 cases 113 children perished from syphilis, a mortality of 60.1 per cent.—*Annales de Dermatologie et de Syphiligraphie*, December 25, 1886.

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EXCISION OF THE KNEE.

IN the *British Medical Journal* for January 15, 1887, HERBERT ALLINGHAM describes a method of excising the knee-joint, which he believes to be new, but which really originated with Ollier, of Lyons. As it possesses decided advantages over the ordinary procedures, and as we do not doubt that it will prove to be new to the majority of our readers, no apology is needed for bringing it to their notice.

An incision, carried from two or three inches above the patella, over that bone, and down to the tubercle of the tibia, splits the quadriceps tendon into the synovial pouch above the joint, as well as the ligament of the patella, and the bone itself is sawed into two equal halves. These halves being held out of the way, the crucial ligaments are divided; and, the leg being flexed, the condyles of the femur are pushed forward on to the tibia, and a slice of bone removed. The leg being next completely flexed, the internal lateral ligament is carefully separated from the corresponding semilunar cartilage, through which the tibia can readily be carried forward, and a thin layer be removed with a knife or chisel. The entire synovial membrane is then carefully removed, and openings are made for drainage at the postero-lateral aspects of the joint. Should the patella be extensively diseased, it is shelled out of the quadriceps tendon; but if the cartilage be merely eroded, it is removed. If the patella is sound, the halves are sutured together with strong catgut, and the ligament of the patella and quadriceps tendon are dealt with in a similar manner. The skin is united separately, and antiseptic dressings applied.

It will be observed that the fascia lata, the lateral

ligaments, and the prolongations of the vasti muscles to the tibia and fibula are not divided, through which the support to the joint, both during and after healing, is much greater than after other methods of operating. Dislocation of the tibia backward, and tilting of the femur forward are prevented, the quadriceps forming a strong antagonist to the hamstring muscles. Finally, progression is greatly improved, as the quadriceps is neither divided transversely nor shortened, as happens when the usual incisions are made.

These are manifest advantages, and certainly entitle the operation to a fair trial. It is certainly well adapted to cases of strumous synovitis, and cases in which the cartilage and bones are not extensively involved. Whether, as Allingham hopes, it will secure a movable joint, the future alone can determine.

ANÆSTHESIA IN LABOR DOES NOT CAUSE POST-PARTUM HEMORRHAGE.

WE take pleasure in presenting to our readers a paper read by DR. FORDYCE BARKER, last week, at the annual meeting of the State Medical Society of New York. It is devoted to the discussion of the question as to the danger of post-partum hemorrhage being increased by the use of anæsthetics during labor. Possibly a better form of putting the question would be, Is there any liability to post-partum hemorrhage caused by anæsthesia in labor? But whatever the form of interrogatory, the subject considered is one of great practical importance, and we are glad that Dr. Barker has brought the rich treasures of his experience to its elucidation.

He gives unqualified preference to chloroform as the anæsthetic in obstetric practice, and presents some strong arguments for this selection; unquestionably it should be preferred to sulphuric ether, as he states, if there be albuminuria. But albuminurics are only a small class of parturient women, and we certainly believe that the vigor of uterine contractions is less frequently lessened if ether rather than chloroform be used. This, however, is not a material point in the discussion, and we pass from the choice of an anæsthetic to the important statement made by Dr. Barker, that uterine inertia, the fountain of post-partum bleeding, is often but another name for uterine exhaustion, "and this must certainly be much less likely to occur when the nerve-force and vital powers have been saved by the use of an anæsthetic."

While Dr. Barker admits that in some cases chloroform prolongs labor, he asserts, as the result of his experience, that the opposite effect occurs in the majority of women—that is, the labor is shortened by chloroform; and this happy result is a consequence not only of diminished resistance of the os uteri and the perineum, but also of the

lessened suffering, whether such suffering be the consequence of an intercurrent disease, or arise from extreme sensitiveness and fear.

In the further discussion of the subject he refers to women attended by him in labor, who in previous confinements suffered from uterine hemorrhage though taking no anæsthetic, while they escaped this accident following labors in which anæsthesia was employed. He adds to these cases others in which pregnancy was complicated by grave cardiac disease, and shows that in these, too, no accident followed the use of chloroform in labor, but, on the contrary, the results were most satisfactory.

The paper is one of very great value, and we trust will lead to the more frequent employment of anæsthetics in labor. Could the voice of those who have had the sufferings of childbirth, if not abolished, at least greatly mitigated by the judicious use of an anæsthetic, be heard and obeyed, no woman would endure the martyrdom of maternity without this relief. A distinguished foreign obstetrician once remarked to us that his wife—who had borne six children, and in all her labors used chloroform—never knew of his going to a case of childbirth without giving him the injunction to let the patient have chloroform.

Nevertheless, while advocating anæsthetics in childbirth, let us carefully draw the line between obstetric and surgical anæsthesia. There is truth in the remark made by Depaul, who rejected anæsthetics in physiological labor, that participation on the part of the patient is important; this applies especially to cases of pelvic presentation after the body has been delivered, and it is so important that the head should not linger or loiter in the pelvic cavity, for asphyxia is then inevitable, that it is then most unfortunate if, as a consequence of too deep anæsthesia, no voluntary and vigorous effort can be made by the woman, since the child soon perishes from delay in the delivery. This last fact suggests another question which has been sometimes mooted, Is there any danger of stillbirth caused by the mother's using an anæsthetic in labor? We hope Dr. Barker will at an early day find the leisure to prepare a paper in reply to this question. No man is better qualified to do the work than he; it would be equally useful with that now presented by him, and the conclusions drawn from his large experience would be most acceptable to the profession.

THE MEDICAL DEPARTMENTS OF THE ARMY AND NAVY.

THERE are at the present time no vacancies in the Medical Department of the Army, but at least three vacancies will occur during the present year

by the retirement of officers who will have reached the limit of age (sixty-four years), and probably three or four more vacancies will be made by resignation, retirement for disability, or death. In the Medical Department of the Navy there are at present ten vacancies, with the prospect that additional ones will be created by retirement, etc.

For each Department an Examining Board will be convened to fill these vacancies, if possible. As the character and nature of the examinations are about the same for the two services, it would seem, from the number of vacancies in the Medical Department of the Navy, that that service is not as attractive to young physicians as is that of the Army, and the reasons for this are worth considering.

The pay of the Assistant Surgeon in the Navy, for the first five years after his appointment, is, per annum, when at sea, \$1700; when on shore duty, \$1400; when on leave, or waiting orders, \$1000. After five years' service, his pay becomes, at sea, \$1900; on shore duty, \$1600; and when waiting orders, \$1200. There seems to be no good reason for the difference in pay for sea and shore duty.

The pay of the Assistant Surgeon in the Army, for the first five years after his appointment, is, per annum, \$1600, and, after five years, \$2200. For the first ten years of service, or thereabouts, the pay of the Army medical officer is somewhat greater than that of the Navy medical officer. But promotion is more rapid in the Navy than in the Army, owing to the fact that the Navy has more officers in the higher grades. Thus, of 180 medical officers in the Navy, there are 15 with the rank of Colonel, and 15 with the rank of Lieutenant-Colonel; while, of 192 medical officers in the Army, there are 5 Colonels and 10 Lieutenant-Colonels. The result of this is that while in the Army it requires about twenty years' service to reach the rank of Major and full Surgeon, in the Navy it requires a little less than fifteen years to attain this grade. Taking it altogether, there is very little difference in the pecuniary emoluments of the two services.

The important point in which the Naval Medical Service seems to be less satisfactory than that of the Army is in relation to absolute rank, and, more especially to the position during the early years of service. The Junior Assistant Surgeon in the Navy is not on an equality with commissioned officers. He has no place in the ward-room, and no room to himself. He has a bunk in the steerage, and messes with the midshipmen and the clerks of the Captain and Paymaster, having practically no privacy, and very inferior opportunities for study. The Junior Assistant Surgeon in the Army has his own quarters, his rank is that of first lieutenant, and his position

is in every way equal to that of other officers of his own rank.

It is this fact which makes the medical service of the Army more popular than that of the Navy, and it is a fact which the Navy Department will do well to consider carefully. It probably requires Congressional legislation to remedy the difficulty. Twenty-five years ago the young Assistant Surgeon in the Navy was a ward-room officer. But under the Act of March 3, 1871, fixing the relative rank of staff officers in the Navy, it is directed that "assistant surgeons shall have the relative rank of master or ensign," that "no staff officer shall, in virtue of his relative rank, have any additional right to quarters," and that "ensigns shall be steerage officers, unless assigned to duty as watch and division officers." There is room for doubt as to the proper interpretation of this law, and until this doubt is removed it is not probable that the Junior Assistant Surgeons in the Navy will receive the consideration to which their education and age justly entitle them. They obtain their education at their own expense, and not at that of the Government as the line officers do, and they are entitled to associate with any officers on board ship. Until this matter is remedied, the Army medical service will be preferred by the young, well-educated physician; and properly so, for the man who can pass either the Army or the Navy Medical Board is, so far as intellect and education are concerned, fully qualified to associate on equal terms with any officers in either of the Government services.

PROTECTIVE INOCULATION AGAINST RABIES.

THERE has been a great deal of scepticism about the method of protective inoculation against rabies introduced by Pasteur, and in the absence of certain essential details it has seemed reasonable to doubt, even in the face of his remarkable results, whether he was dealing with true hydrophobic virus. Nowhere have the criticisms been more pungent or unsparing than in this country, though they have usually lacked the weight which we accord to judgments based on observation, and to opinions supported by experiments.

Last Monday, Dr. ERNST, of Harvard University, presented to the Academy of Surgery of Philadelphia the results of his investigations upon Pasteur's method, and the members of the Academy and the profession had the privilege and pleasure of listening to a contribution worthy of the subject. Dr. Ernst obtained his material direct from Pasteur's laboratory, and has carried out in full detail the method there employed. His conclusions confirm in almost every point those of Pasteur, viz., the existence of a specific virus in the animals experimented with, the possibility of attenuating this virus, and the protec-

tion afforded by inoculations. Dr. Ernst began the work as a sceptic, and was quite uninfluenced by personal considerations, as he had not studied in Pasteur's laboratory.

The only doubt which exists is as to the nature of the virus with which Pasteur has been working so long. Is it the same as true street rabies? Many of the opponents of the method maintain that this laboratory disease is different from the ordinary rabies, and we have wondered that inoculations have not been made from recent and undoubted cases in the dog. This has, however, been recently done by Prof. Frisch, of Vienna, who has established the identity of the virus with that with which Pasteur works.

DECOCTION OF COTTON-ROOT AS A UTERINE HÆMOSTATIC.

HAVING repeatedly tried cotton-root, in the form of the fluid extract, as a uterine hæmostatic without marked beneficial results, our conclusion was that the remedy was without any great value. The experience of Dr. GARRIGUES, as made known in the *Quarterly Bulletin* of the Clinical Society of the New York Post-Graduate Medical School and Hospital, proves that the drug given in the form of decoction produces markedly beneficial results. The following are his directions for preparing and administering it: Three heaping teaspoonfuls of the powdered root are boiled in a pint of water for fifteen minutes; after cooling the preparation is strained: one-third of the decoction is taken in the forenoon, another in the afternoon, and the last at bedtime.

Dr. Garrigues has used the remedy in 139 patients, and in the great majority of cases with more or less decided benefit. He has found that it checks the bleeding from uterine fibroids, and also lessens the associated pain; while in sarcoma and carcinoma it limits, or altogether suspends, for a time hemorrhage. He insists that the remedy should be used in the form of a freshly made decoction, and states that it fails to produce any benefit in about one in ten cases, which is certainly not an unsatisfactory showing.

The attention of the profession will doubtless be directed anew to the use of this remedy by the important and apparently conclusive results obtained by Dr. Garrigues, who, as is well known, is one of our most capable and conscientious observers.

THE new Japanese Pharmacopœia, which has been compiled under the supervision of the Sanitary Bureau of the Home Department, has just been issued, and, by direction of the Home Minister, it comes into use from the first of July next. We understand that Dr. Eykman, who was one of the Commission which framed the Pharmacopœia, is now engaged upon a work similar in scope to our

National Dispensatory, which is to accompany the official Pharmacopœia, and is to be issued before July, 1887.

The new Pharmacopœia is based on the American, German, and British, and contains 475 articles. The official text is Japanese, but the whole work is also to be published in Latin. The metric system forms the basis of measurements, but the proportions are given in parts by weight.

THE New York State Medical Society held its annual meeting last week at Albany. The following were elected officers for the ensuing year: *President*, A. L. Loomis, of New York; *Vice-President*, A. M. Phelps, of Chateaugay; *Secretary*, William Manlius Smith, of Syracuse; *Treasurer*, Charles H. Porter, of Albany; *Censors*—Southern District, J. S. Warren, of New York; M. B. Chase, of Brooklyn; and W. H. Helm, of Westchester. Eastern District, J. Lewi, of Albany; Thompson Burton, of Montgomery County; and L. McLean, of Troy. Middle District, J. G. Orton, of Binghamton; Robert Frazier, of Oneida County; and I. N. Goff, of Madison County. Western District, Theodore Dimon, of Cayuga County; M. S. Kittinger, of Niagara County; and David Little, of Monroe County. College of Medicine, Syracuse University, Harvey Jewett, of Ontario County.

THE profession will regret to learn of the death, at Charleston, S. C., on February 3d, of Dr. J. F. M. GEDDINGS, aged fifty-eight years. He was the eldest son of Prof. Eli Giddings, who for many years was Professor of the Practice of Medicine in the Medical College of the State of South Carolina, and the most conspicuous physician in that State. He inherited much of his father's ability, and succeeded to a good share of his business. He was educated in Charleston, and also in Berlin and Paris. He exhibited during his career a decided partiality to German methods of research and views of pathology, and was regarded as well versed in the literature of the profession, and as proficient in methods of diagnosis. His general scientific and literary attainments were also of a high order.

Dr. Geddings had been almost a life-long sufferer, in his youth from hip-disease, following scarlet fever, and in advanced age from paroxysms of angina pectoris. To a certain extent his usefulness was thus impaired, but he continued to the end a general practitioner, highly valued for his knowledge, his skill, and his devotion to his profession. He had a kind heart, and he was as true as steel to those who trusted him, and was never forgetful of professional responsibility or ethics. His untimely end he had foreseen, and to some extent predicted. Seized with symptoms of pulmonary congestion, or pneu-

monia, he still struggled on in the discharge of his professional duties up to the day preceding his death. Upon taking to his bed, from the direst necessity, it was soon discovered that a much hypertrophied heart so complicated the situation that there was but little hope of recovery. In less than twenty-four hours his noble heart had ceased to beat.

THE danger of the telephone as a conveyer of infectious diseases has attracted the attention of Dr. A. P. Astvatzatiroff, of Tiflis, and he has called the attention of the Caucasian Medical Society to the risk of infection from the promiscuous use of the mouth-pieces of public telephones. To prevent this accident, he gravely recommends that some disinfectant fluid should be kept at every telephone station, and the speaker should, first of all, dip the mouth-piece into the fluid, and then wipe it with a clean towel.

A CABLEGRAM announces the death of PROFESSOR SCHRÖDER, of Berlin, gynecologist and obstetrician. As the author of the German text-book on obstetrics most widely quoted, and of a manual of gynecology extensively read, he is well known here; while a long and honorable career as an operator and instructor has raised him to a most eminent position in Berlin. His clinic, in its excellent building, is one of the most completely equipped in Germany, and his instruction has been eagerly sought by students from all parts of the world. Professor Schröder was about fifty years of age.

By the vital statistics in Michigan it is found that smallpox has been comparatively epidemic every five years. Thus, in 1872 there were 302 deaths reported in Michigan from the disease; in 1877 there were 102, and in 1882 there were 100. This is the last year of one of these five-year periods, and, according to past experiences, it is thought that we may expect the disease this year. Smallpox is present in New York, Ohio, and Wisconsin, and if immigration is large this year, the danger from it may be increased. The moral is, that this is a good year for vaccination against smallpox.

THE Executive Committee of the International Congress of Hygiene and Demography, which will meet from September 26th to October 1st in Vienna, is pushing forward preparations. The participation of a number of men, well informed upon the topics for discussion, has been already secured. In the two general sessions which will be held, papers and oral statements only will be received; discussions will be referred to appropriate sections of the Congress. Especial stress will be laid upon the scientific value of the meeting, and the element of festivity will occupy only an incidental relationship.

A CABLEGRAM from London states that the Right Hon. C. T. Ritchie, President of the Local Government Board, announced in the House of Commons last Tuesday the appointment of a committee to consider and report upon the advisability of establishing a hospital for the treatment of persons afflicted with hydrophobia; the institution to be conducted upon the principles established by M. Pasteur in Paris.

SOCIETY PROCEEDINGS.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, January 12, 1887.

THE PRESIDENT, CHARLES MCBURNEY, M.D.,
IN THE CHAIR.

DR. LANGE presented two patients showing the result of

INGUINAL COLOTOMY.

The operation he described as follows: It is a well-known fact that in the operation of colotomy, inguinal as well as lumbar, in which merely a lateral opening in the gut has been made, the contents of the latter will, as a rule, escape, to some extent, into the intestine below the wound, and being forced upward by antiperistaltic action, will prolong and render difficult the process of defecation. He confessed that in nearly all of his cases of colotomy, which were performed according to the above method, the result in regard to this point had been unsatisfactory until he adopted Madelung's plan of cutting across the entire gut, closing the end of the lower portion, and stitching the upper end into the abdominal wound. The result was perfect, so far as concerned defecation; the patient passed feces once or twice a day in a short period of time, and was free from all annoyance during the rest of the day.

From reading a discussion that took place at the Paris "Société de Chirurgie," his attention was called to the possibility of danger eventually arising from retention in the closed portion of gut above the point of stricture; and he, therefore, adopted in his last three cases Verneuil's plan of forming a spur, and thus securing the complete evacuation of the feces through the artificial anus, while at the same time the interior of the lower portion of the gut remains accessible.

The technique of the inguinal operation is as follows: Under strict antiseptic precautions an incision is made parallel with Poupart's ligament, and about three centimetres above its outer third. The peritoneum is opened to the extent of not more than three or four centimetres, a loop of the colon, in the region of the sigmoid flexure, is brought into the wound, and a needle armed with a coarse catgut ligature is passed under the gut at the point of attachment of the mesentery; the ligature is not tied, but serves merely as a handle. A spur is then formed by passing through a part of the intestinal wall on both sides of the mesentery a fine needle threaded with iodoform catgut, the line of stitches being about equal to the thickness of the abdominal wall, or perhaps a little longer. Then by similar sutures the opposite parietal and visceral peritoneal surfaces are brought in contact, so that the peritoneal cavity is entirely shut off

from the wound, and the loop of intestine so far as its peritoneal surface had been approximated by stitches, will be secured above the level of the parietal peritoneum. The gut is then opened by an incision, extending in a transverse direction toward the attachment of the mesentery, the edges being united to the integument by a few sutures of silkworm gut. Some iodoform gauze is introduced into the properitoneal space at each angle of the wound: this promotes good drainage during the first twenty-four hours. The wound is dressed with vaseline and iodoform powder.

He had performed this operation three times at the German Hospital, within a period of fourteen days. Two of the patients had inoperable cancer of the rectum, the third an extensive syphilitic stricture. Recovery followed rapidly in each instance, without any unfavorable symptom, and the final result is so satisfactory that he felt justified in recommending this method.

He exhibited two of the patients. In one of them there was observed a slight prolapse of the mucous membrane, which the patient attributed to the fact that she did not that day adjust properly the elastic belt which retains a pad of cotton against the opening. These patients, as well as the third, who could not be present, discharge their feces through the artificial anus. Defecation occurs once or twice daily, and occupies only a few minutes. The lower portion of the gut can easily be washed out, by introducing a thick rubber tube into the rectum, seating the patient upon a chamber, and injecting fluid through the artificial anus. This procedure is an important one, especially in the case of syphilitic stricture, whose history is briefly as follows:

She is a married lady, about thirty-six years of age, who contracted syphilis from her first husband. Dr. Lange treated her for about six years for stricture of the rectum, accompanied with extensive and obstinate ulceration; colotomy was proposed long ago, but she would not consent to it. In October, 1886, a severe pelvic peritonitis developed, apparently due to extension of the ulceration to the intestine above the seat of stricture; there was considerable exudation, and an abscess formed that was evacuated through an incision made on the right side above Poupart's ligament. It was necessary to separate adherent coils of intestine in order to reach a large collection of extremely fetid pus which filled the entire true pelvis. A counter-opening was made in the vaginal fornix. Within several weeks the patient rallied sufficiently to admit of the performance of inguinal colotomy. In spite of her miserable condition, recovery was perfect, and her strength and state of nutrition have been greatly improved. There is still a discharge of pus and blood from the rectum, but there is much less than before.

DR. SANDS remarked that, three days before, he had been summoned to the country to perform colotomy upon a gentleman suffering with cancer of the rectum. He made the usual lumbar incision, and had no difficulty in recognizing the various layers of tissue until the peritoneum was reached. Thinking that he had identified the latter, he proceeded to puncture it cautiously, when a clear serous fluid escaped. Seizing what he supposed was the colon, he proceeded to stitch it into the wound, intending to leave it for twenty-four hours before incising it, in order that the parietal and visceral serous surfaces might become adherent. The

needle that he employed made such a large puncture, that he judged it expedient to open the gut at once, which was accomplished successfully. This case was the only one in which he had failed to open the colon behind the peritoneum; the failure was undoubtedly due to the complete investment of the colon by the serous membrane. The late Dr. Mason encountered two similar cases, and wrote a paper in which he called attention to the fact that the colon sometimes took an abnormal course. In one instance the operation of colotomy was being performed at Charity Hospital, and a portion of the gut was exposed, which, in the opinion of several surgeons who were present, was large intestine. At the autopsy it was found that a loop of small intestine had been fastened in the wound. It is better, he thought, to seize and secure the small intestine if it appear in the wound, rather than to spend too much time in searching for the colon; danger is best avoided by suturing the gut to the wound, and waiting for adhesion to take place before opening it. The patient operated on by Dr. Sands made a prompt recovery, and was convalescent when heard from ten days afterward.

DR. GERSTER said that, after witnessing one of Dr. Lange's operations, he was so much pleased with the idea that he adopted it in the case of two patients, upon whom he performed inguinal colotomy the same afternoon. He preferred the inguinal to the lumbar incision, not only because it is easier to reach the intestine by the former method, but because patients find it much easier to cleanse themselves when the artificial anus is in front. There is no doubt that it is often a difficult matter to find the colon in lumbar colotomy, especially when it is not blown up, so that the surgeon is often obliged to content himself with the next best thing, a loop of small intestine; moreover, it is necessary to divide a number of thick strata before reaching the cavity. In the inguinal operation, on the contrary, the abdominal wall is much thinner, it is easier to recognize the gut, and the subsequent introduction of sutures is less difficult. In one of his cases feces escaped into the lower portion of the bowels for two or three months because the spur that had been formed was made too short through the subsequent contraction of the parts; however, this was corrected. The suture was very much facilitated by seizing the parietal peritoneum on each side with artery forceps, and drawing it well out, when it was quite easy to unite the two serous membranes in extensive contact.

DR. SANDS remarked that a German writer has laid much stress upon the importance of uniting the parietal and visceral peritoneum before opening the gut; he first stitched the parietal peritoneum to the skin, and then the former to the serous covering of the intestine, thereby securing perfect adhesion of the latter to the edge of the wound. His own experience had been different from that of Dr. Gerster. One of the three patients, upon whom he had performed lumbar colotomy, and who was under observation for six months, had been much annoyed by the escape of feces from the opening. They seemed to be retained better after lumbar colotomy.

DR. GERSTER said that he had been misunderstood; he only referred to the greater ease with which the patient can cleanse himself when the artificial anus is situated anteriorly. The escape of feces can often be

prevented by making the incision in the abdominal wall only as long as is absolutely necessary. If it is too long, prolapse is apt to occur. In one of his cases, where the intestine was small, and its wall and the abdominal incision too ample, there was afterward some prolapse; in the other, a small incision was made, and there was no prolapse, a perfect funnel-shaped opening resulting. The final result of the operation, regarding the shape of the artificial anus, depends, to a great extent, on the local peculiarities of the abdominal walls and gut of different individuals.

DR. LANGE said that in his cases the contents of the bowel were, as a rule, discharged only once or twice after the operation. When the intestine is merely opened by a lateral incision, the fecal matter is apt to pass by the opening into the lower portion of the colon, and to be regurgitated in consequence of the antiperistaltic action, thus causing the patient great annoyance.

DR. LANGE prefaced his description of

A NEW RADICAL OPERATION FOR HEMORRHOIDS,

by stating that in mild cases he had obtained good results by injecting equal parts of glycerine and pure carbolic acid. In severe cases, complicated with prolapse of the mucous membrane, he had adopted a method of operation that was to be commended not only on account of its facility and the completeness of the cure, but because of the fact that it is not followed by supuration and necrosis of the tissues. It consists in excising the entire affected portion of the mucous membrane, and in suturing the edge of the remaining part to the integument. The essential advantages are the perfectly aseptic character of the process, and the small loss of blood.

He described the operation briefly as follows: After the patient has been duly prepared by proper attention to diet, and the thorough evacuation of the bowels, a sponge is pushed high up into the rectum, and the lower part of the gut is thoroughly irrigated with a weak solution of corrosive sublimate, followed by one of boro-salicylic acid. The patient is thoroughly anesthetized, so as to avoid straining and consequent venous congestion. The field of operation is constantly irrigated with an ice-cold boro-salicylic solution. An incision is carried around the anal orifice at the line of junction between the skin and mucous membrane, the parts being put on the stretch by making traction with tenacula. If the skin is flabby and in excess, a portion of it may be included within the incision; the latter is carried downward until it reaches the fibres of the external sphincter, the distended hemorrhoids being easily avoided. The mucous membrane is easily separated from the sphincter as far upward as may be deemed necessary. In this way the entire degenerated portion is isolated and, so far as the arterial blood supply is concerned, remains connected with the healthy tissue only by the vessels that supply it. So far but few bleeding points require to be secured. If now the entire diseased part should be excised, there would undoubtedly be a considerable loss of blood, as occurred in his first case; the mucous membrane would retract as it was divided, and the operation would be long and embarrassing. He therefore inserts a number of buried sutures of iodoform-catgut close to each other, between the base of the external flap and that of the separated mucous membrane; these do not

include any of the fibres of the sphincter, neither do they penetrate into the rectum. He lays particular stress upon the avoidance of the sphincter, since he has observed in several cases that the patient suffers from severe tenesmus if the stitches penetrate the sphincter. The sutures may be either continuous or interrupted; they secure nearly all the vessels supplying the hemorrhoidal portion. The mucous membrane is excised in parts, at a point from one-half to one centimetre above this line of sutures, and the cut edges are approximated by sutures of silkworm gut.

In several instances he had passed deep stitches which included the entire sphincter, in order to diminish the tension, but he thinks that these can be dispensed with.

From the beginning of the third day following the operation, the patient is allowed to have a passage daily, and is kept on liquid diet for a week, at the end of which time the sutures may be removed; a few days later he may be allowed to get up, and at the beginning of the third week he will, in his experience, be able to attend to his business.

Much of the success of this operation depends upon the technique. He can testify from his own experience in about a dozen cases, that the rapidity and completeness of the healing process, the comfort of the patient, and, in short, the neatness of the entire procedure, have induced him to prefer it, in suitable cases, to other methods (Allingham's, Langenbeck's, etc.). Strict antiseptics and the avoidance of hemorrhage, in the manner described, he regards as indispensable to success. (A patient was presented upon whom the operation had been performed three weeks before.)

DR. LANGE presented a patient upon whom he had performed

COMPLETE EXCISION OF FISTULA IN ANO.

Year before last he proposed, at a meeting of this Society, the advisability of treating fistula by excision of the entire fistulous tract, the raw surface being brought together with sutures, with the view of securing healing by first intention. He described a certain method, but his experience at that time was derived from a few operations, the results of which were only partly successful, though encouraging. The first operation was performed two years ago upon a lady who had a deep-seated fistula, the internal opening of which was situated two or three inches above the sphincter. She was perfectly cured in two weeks. Since then he has had about a dozen cases in which the extent of the lesion and the gravity of the operation varied, the results being as follows: In four cases primary union occurred without suppuration, in three a similar result was obtained with but slight suppuration; in four the wound healed by granulation, in a shorter time than it would have done after one of the old operations. In one instance I did not sew up the wound at all on account of inflammatory infiltration of the edges; in another, that of a gentleman whom he had treated during the acute stages of a very extensive gangrenous periproctitis, there was so much cicatricial tissue that he did not venture to excise it all for fear of removing so much of the muscle that incontinence might result, this patient has still an internal fistula, which does not cause any inconvenience, except a slight discharge.

His technique has been essentially the same as that

described at a former meeting, viz., excision of the entire fistulous tract, together with all the lateral sinuses, such as not infrequently exist in the cellulo-adipose tissue above the sphincters, and union of the deep tissues by means of buried sutures of iodoform catgut, as well as accurate adaptation of the edges of the mucous membrane. Several sutures include the entire field of operation, in order to relieve the tension of the parts. The field of operation is constantly irrigated with boro-salicylic solution. The edges of the integument he prefers to unite by only a few sutures, in order to allow drainage of the first secretion. Opium is administered during the first two days. After the second day the bowels are moved easily with injections, a sitz bath being used after defecation.

He has performed this operation only once in a case of fistula of tuberculous origin, the result being perfect. There was a large shallow sinus, which did not communicate with the rectum—a condition which, in his experience, is not infrequent in tuberculous fistulae. He is skeptical regarding the existence of so-called incomplete external fistulae in other cases, having always succeeded in finding the internal opening, except once, in a dermoid fistula. Neither does he accept the general opinion that muscular contraction prevents a fistula from healing, as it is very probable that the entrance of obnoxious matter into the sinus causes repeated attacks of inflammation, and accounts for the chronic nature of the affection. In the last patient upon whom he operated a few days ago, he did not find an internal opening, its site being occupied by a slight elevation, covered by a thin cicatricial tissue. This was probably only transient cicatrization.

In the *Medical Record* of June, 1886, Dr. Stephen Smith published a paper on this subject, in which he states that in 1879 he conceived the idea of treating fistula in this manner, after reading in Dr. Emmet's book a description of that gentleman's plastic operation upon the perineum. At that time Dr. Smith excised the granulating surface of a fistula that had been operated upon unsuccessfully six months before; consequently, that operation was scarcely applied to a fistula proper. He does not state just when he adopted the method described by him; but, if it was immediately after the operation above mentioned, he was probably the first surgeon to practise it. Dr. Lange took the liberty of claiming priority in his description of the details of the operation, and especially the use of antiseptic precautions, which differs in no essential feature from that given by him.

The patient presented had a very extensive V-shaped sinus, one branch of which ran high up, parallel with the rectum, the external opening being situated about four inches to the right of the anus, while the internal was above the external sphincter. After the operation an enormous cavity was left, into which the fist might have been inserted. In this case the internal wound was only partially closed, and was drained with iodoform gauze. The operation lasted several hours, and, in fact, could not be completed on account of the fading light. Recovery was interrupted by the occurrence of retention after transient apparent healing. She now had perfect control of her bowels, and does not suffer from diarrhoea. The sphincter in the last case is not perfectly sound.

DR. HALL asked how soon the bowels were moved after the operation.

DR. LANGE replied that at first he allowed them to remain constipated for from ten to fourteen days, but now he orders an enema of oil on the morning of the second day and a laxative the same evening, so as to insure a soft stool on the third day.

DR. SANDS did not see what advantages were claimed for the new operation for hemorrhoids, but he presumed that its purpose was to avoid the hemorrhage which was so much dreaded by the older surgeons. He thought that most of the members of the Society were partial to the use of the ligature, especially in cases in which there was much prolapse; a certain amount of inflammation took place around the ligature which favored adhesion of the intestine to the adjacent parts, thereby guarding against further protrusion. The old operation of Allingham is perfectly satisfactory, and the surgeon, after performing it, can leave his patient, feeling that there is no danger of hemorrhage. The speaker did not attempt to strip off the mass at all, but simply incised the skin around the base of the pile sufficiently to allow the complete burying of the ligature and, the mucous membrane being drawn down as far as possible, the risk of subsequent stricture was avoided. It would require a good deal of argument to induce him to abandon the old operation.

He had practised the method of complete excision of anal fistula in four cases, only one operation being successful. Only small, straight fistulae can be excised with the expectation of their healing by first intention; in complicated fistulae it is necessary to remove a good deal of tissue, which, in the vicinity of the anus, is particularly undesirable in view of the subsequent cicatricial contraction. The operation is certainly not adapted to all cases. Fistulae can be cured by simply scraping out the tract.

DR. LANGE admitted that the method is not applicable to every case, but it can be employed successfully even in cases of tortuous sinuses extending high up the rectum; moreover, the result is equally good when the wound is not closed, but is allowed to heal by granulation. It is important, however, to bring the edges of the mucous membrane in apposition, as healing is retarded by contact with fecal matter.

THE PRESIDENT presented a patient showing the results of

EXCISION OF THE ANKLE-JOINT,

whose history was as follows:

Annie Duval, aged eighteen, colored, was admitted to St. Luke's Hospital March 11, 1885. About a year before her admission she had sprained her ankle severely, and suppurative synovitis followed; the pus had been evacuated by incisions. Her family history was phthisical. On admission, her ankle was swollen and tender, and evidently contained fluid; a sinus behind the internal malleolus communicated with the interior of the joint. On the 31st of March he excised the joint, making a curved incision behind each malleolus, and removing the lower end of the tibia and fibula by a horizontal section, as well as the entire upper surface of the astragalus by a parallel cut. The limb was put up in a permanent dressing covered with plaster of Paris, and so retained till April 28th. The wound healed perfectly

in eight weeks, since which time the patient has walked with ease, limping only slightly. Slight subcutaneous suppuration occurred recently, which healed at once after scraping. Motion is now quite free, and the joint is strong. The shortening amounts to seven-eighths of an inch.

THE PRESIDENT also showed a

CASE OF ANEURISM OF THE INNOMINATE ARTERY TREATED BY LIGATURE OF THE CAROTID AND SUBCLAVIAN.

Martin Cavanagh, an Irishman, aged thirty-five, was admitted to St. Luke's Hospital March 9, 1886. He was probably syphilitic. Two weeks previously he had noticed a tumor on the right side of the neck, just above the inner end of the clavicle; a week later he became hoarse, and at the time of his admission he could speak only in a whisper. The tumor was considered to be an aneurism of the innominate artery, involving probably the commencement of the carotid and subclavian arteries. Pulsation was very marked, and was readily felt to affect the upper end of the sternum, the inner end of the clavicle, and the first two intercostal spaces. On April 16th it was found that the tumor had grown decidedly, and then measured three and three-quarter inches transversely, and extended to a point a little above the cricoid cartilage, displacing the trachea to the left. He considered the hoarseness to be due to tension of the right recurrent laryngeal nerve. The patient was kept in bed, and received ten grains of iodide of potassium three times a day until April 16th, during which interval the tumor became somewhat larger. He operated on April 20th, applying a catgut ligature to the carotid in its upper portion, and another to the third part of the subclavian. Pulsation almost entirely ceased in the tumor. The wounds healed very rapidly. On May 26th, the patient was put upon strict diet, according to Tufnell's plan, and was kept in bed until July 28th, since which time he has been about the ward, and has taken ordinary diet. The tumor has steadily diminished in size, and is now considerably less than one-fourth of its original size, the wall of the sac being thick and firm. The voice is only slightly hoarse.

TORONTO MEDICAL SOCIETY.

Stated Meeting, January 5, 1887.

THE PRESIDENT, DR. MCPHEDRAN, IN THE CHAIR.

DR. TEMPLE showed

THE UTERINE APPENDAGES

removed on account of purulent inflammation of both Fallopian tubes. The patient, æt. thirty-three, had been married eleven years, was never pregnant, began to suffer one year after marriage. During the last year was almost constantly confined to bed, as any exertion caused severe pain in the pelvis lasting several days, probably due to attacks of circumscribed peritonitis. She was a thin woman, and the abdomen was enlarged equal to the fifth month of pregnancy. On vaginal examination the uterus was found pushed forward and upward so that the cervix could be felt with difficulty behind the pubic symphysis. The Douglas cul-de-sac was filled with a fluctuating mass. The right tube could be ac-

curately mapped out by bimanual palpation; the left could not be so well outlined. On opening the abdomen the mass presented the appearance of a fibro-cyst. The structures were greatly matted, the adhesions being separated with difficulty. The right tube burst during separation and about eight ounces of pus escaped into the pelvic cavity. The right ovary was removed; the left could not be found; it had probably become absorbed from pressure. The patient made satisfactory progress, the temperature not exceeding 101°F .; usually varying from 99° to 100°F .

DR. ROSS exhibited a

PLACENTA FROM A CASE OF TWIN PREGNANCY,

in which the cords, which were attached to the placenta very close together, were inextricably knotted. Death of both foetuses had occurred some days before birth.

DR. MCPHEDRAN exhibited the stomach, lung, and œsophagus from a case of

GASTROSTOMY FOR MALIGNANT STRICTURE OF THE ŒSOPHAGUS,

with the following history:

Eliza S., aged forty-one, unmarried, first consulted him in April, 1886. Her digestion had always been weak but otherwise her history was good, as was also her family history. At Christmas, 1885, she began to experience pain behind the lower part of the sternum and in the mid-dorsal region, with difficulty in swallowing. The pain was not increased by food. By March she was unable to swallow solids, and much of the liquid was returned as soon as swallowed. Mouthfuls of clear mucus were frequently ejected from the œsophagus without nausea or distinct act of vomiting. A sound gently introduced, was arrested eleven inches from the upper dental arch, showing a stricture about three inches from the cardiac orifice of the stomach. A No. 10 catheter, English scale, passed fairly easily but caused some pain; after a few days a No. 12 passed, but beyond that the stricture could not be dilated. A catheter with a funnel attached was introduced four times daily for the purpose of administering nourishment and for a short time she improved in appearance. The stricture gradually contracted, so that by June 1st, only a No. 8 catheter could be used, and even it caused so much pain that it was evident she could not continue to take nourishment much longer in this way. Rectal alimentation was resorted to, but each enema induced such severe colic that they could not be continued. As she suffered much from hunger and thirst, especially the latter, gastrostomy was proposed, the risks and disadvantages being fully explained to her.

After some hesitation she decided to submit to the operation and the first stage was done on the 11th of June. An oblique incision, three inches long, was made three-fourths of an inch below and parallel to the eighth and ninth costal cartilages till the sheath of the rectus was opened, when the direction of the incision was changed to that of the fibres of that muscle, so as to secure the benefit of any sphincter action it might subsequently exercise. On opening the peritoneum, the margins of the liver, gastrohepatic omentum, and stomach were exposed, the latter contracted and overlapped by the omentum, which was traced up to the under surface of the liver in order to make certain of

the stomach. The stomach was then drawn downward and to the right, a fold of it drawn through the abdominal opening and transfixed by two harelip pins about one-half inch apart and lying across the line of the skin incision. The pins transfixed only the serous and muscular coats. Silk sutures were now introduced so as to bring together the peritoneal as well as the superficial parts of the wound closely around the protruding portion of stomach; but no sutures were introduced into the stomach, it being held firmly in place by the pins. The wound was freely dusted with iodoform, over which dry gauze and salicylated wool were placed and held in position by a broad flannel bandage.

She reacted satisfactorily after the operation, ether being used. The dressing was not changed till the fifth day, when union was found to have taken place by first intention. The gauze covering the protruding portion of stomach was so firmly bound down by plastic effusion that its separation caused a little breaking down of the union between the stomach and the superficial part of the wound, which took a few days to unite.

Temperature and pulse were normal throughout, and the only discomfort complained of was a little soreness, for a few days, at the wound on moving the body. She was nourished by enemata for three days; after which some food was given by the stomach tube which was, at first, more easily introduced than before operation.

The stomach was opened on the 21st of June, the tenth day after the preliminary operation. A narrow blade was introduced between the pins and then a No. 6 catheter passed into the stomach, a large syringe attached to it, and three ounces of milk slowly injected. The catheter was left in, a compress being placed around it. The opening of the stomach caused no pain or discomfort beyond a little nausea, no anæsthetic was therefore used. The size of catheter was gradually increased until a soft rubber tube, equal to No. 18, English scale, was introduced. From the first there was some trouble from leakage around the tube with some excoriation about the opening. With this exception she experienced great relief through the operation. She gained strength, and was able to walk and drive out with comfort—the pain in the chest became much less and was often absent for days. Her condition was very good from July to October, her chief complaint being of the leakage around the tube and the profuse ejection of mucus from the œsophagus, and occasional hemorrhages. Toward the end of November she began to fail rapidly, though still taking food freely. The oozing increased as her strength failed. During December she was confined to bed, cough developed and increased, with increasing dyspnoea. There were, at times, free hemorrhages. Her weakness increased till she died, on the 28th of December, six months and eighteen days after the operation was performed.

On post-mortem examination the seat of operation showed firm union between the wall of the stomach and the abdominal wall, the margin of the liver being also adherent, the fistulous opening was about one inch from the pylorus. The stomach was much dilated, and the walls thinned as compared with its condition at the time of operation; it now extended two inches below the fistulous opening. The upper part of the œsophagus was dilated; the lower five inches were converted into a sloughy cavity filled with offensive grumous material.

The growth was adherent to the bronchi, aorta, and spine; the inner surface of the aorta showed signs of invasion. The lungs showed no signs of deposit, but their back parts were in an advanced state of hypostatic pneumonia, which was doubtless the immediate cause of death.

The objects aimed at by operating in this case were fully attained, viz., first, and chiefly, the relief of suffering from hunger and thirst; and secondarily, the prolonging of life. The oozing from the fistula was disappointing; it could probably have been avoided by introducing the tube each time food was given instead of retaining it permanently in the fistula. For the purpose of giving food an ordinary enema syringe could be used, a funnel being attached to one end and a small tube to the other after the method recommended by Bryant.¹

Gastrostomy, at best, is, unfortunately, only palliative in malignant disease. Nevertheless, as the dangers attending it, as in abdominal sections generally, are now comparatively slight, almost *nil*, in fact, since its division into two stages, it is one worthy of careful consideration in all cases of œsophageal stenosis. During the last few years all the deaths from it have probably been from prostration on account of the operation having been too long postponed. Of thirteen cases operated on by Dr. Kun, of Moscow, ten recovered and three died, one from perforation of the left bronchus on the second day, another from hemorrhage on the eighth day, and the third from prostration on the twelfth day.² Suturing the transverse colon instead of the stomach is a possible source of danger, and has occurred to some of the most eminent surgeons.

In this case the stomach was secured after the method practised by Boyce Barrow, of the West London Hospital.³ This method is as efficient as, and more expeditious than by the double circle of sutures recommended by Howse, to whom is due the credit of having rendered the operation safe by dividing it into two stages. Barrow's directions were departed from in that only the serous and muscular coats were transfixed by the pins; this method, while rendering the subsequent opening of the stomach more difficult on account of the mucous membrane receding so far from the surface, probably secures greater certainty of asepticism in the wound, as septic matter may find its way along the pins from the stomach if these pierce the mucous membrane.

The sutures for closing the wound might, with advantage, be passed before transfixing the stomach with the pins, as the protruding portion would not be in the way. After passing the sutures the stomach could be secured and the sutures then tied; those sutures lying in the way of the protruding stomach should be divided and used to bring the peritoneum and skin together on each side, and thus present a broader peritoneal surface for union to the stomach. This union takes place very rapidly; it has been found firm in nineteen hours in one case, in another in twenty-four hours, and in a third, in thirty hours.⁴ This being so, rectal alimentation can, in urgent cases, be supplemented by food to the stomach

very shortly after the preliminary operation. If the œsophageal stricture were impermeable the stomach had better be opened; in rare cases it might be advisable to do so at once on securing the stomach, in order to prevent fatal prostration.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, February 3, 1887.

THE PRESIDENT, A. JACOBI, M.D., IN THE CHAIR.

ADDRESS BY THE PRESIDENT.

DR. JACOBI, on entering upon the duties of President for another two years, said that the position was not simply an honor, or otherwise he would have declined it, as there were others more worthy of this distinction; but the office was also one of grave responsibilities, and he was willing to submit to these. In his past course he had endeavored to select as subjects for the scientific discussions of the Academy such as were of general interest to the profession; leaving to the various sections, for the most part, those that were of special character. He had also taken particular pains to enlist the young men, with their enthusiasm and spirit of earnest endeavor.

In speaking of the present prosperity of the Academy, he referred to the development of nine distinct sections, now all in active operation, and stated that one hundred and twenty names had been added to the Fellowship of the Academy during the past year. During the year, also, no less than \$100,000 had been donated to the building fund, and the need for more extensive and suitable accommodations than the present ones was pressing.

A COMMITTEE ON BUILDING SITE

was appointed, consisting of Drs. George A. Peters, Frederick A. Castle, and the President; who represented respectively the Council, the Board of Trustees, and the Academy at large.

DR. JOHN H. GIRDNER read a paper on

THE DETECTING AND LOCATING OF METALLIC MASSES IN THE HUMAN BODY BY THE INDUCTION BALANCE AND THE TELEPHONIC PROBE.

The induction balance, which was the invention of Professor Alexander Graham Bell, of Washington, he said first suggested itself in the summer of 1881, after the shooting of President Garfield. The attempt was made to locate the ball in his case by this means, but, owing to the crudity of the apparatus, the lack of experience in its use, and the disturbing element due to the presence of a large steel mattress on which the patient lay, which was unknown at the time, the result was unsatisfactory.

Having stated that in his opinion this apparatus would be indispensable in time of war, Dr. Girdner proceeded to describe it. An ordinary bichromate battery of six cells is used. An interrupted current is necessary, and about 600 interruptions per minute have proved the most useful for the purpose. For the induction balance two currents are required, the primary and the secondary or induced, and each current passes through two coils of wire (No. 25), one of which is twice the size of the other. The two larger coils, which are simply laid over each other, and fastened on a large

¹ Practice of Surgery.

² Annals of Surgery, September, 1886.

³ Brit. Med. Journ., vol. ii., 1884.

⁴ Gross: THE MEDICAL NEWS, December 1, 1884.

disk of wood, provided with a handle, which is called the *explorer*, and the coil of the induced current is connected with a telephonic receiver.

When no metallic substance is in the vicinity of the explorer, no sound whatever is heard by the ear placed at the telephonic receiver; but when the explorer is brought near a metallic mass the presence of the latter is indicated to the ear by the sound heard in the receiver; this sound increasing in intensity as the explorer approaches nearer and nearer the mass. The larger coils were called the exploring coils and the smaller the adjusting coils. The greatest intensity of sound is reached when the centre of the explorer approaches the nearest to the metallic body. Fortunately for the successful application of the instrument, experiment has shown that living tissue is the best conductor of the sound.

The telephonic probe was also the invention of Professor Bell. A telephonic receiver is connected with a piece of ordinary steel laid upon the surface of the body, and also with a long needle, which is to be inserted into the flesh at the point indicated by the explorer as that at which the sound in the telephonic receiver of the induction balance is most distinct. As soon as the point of the needle comes in contact with the metallic mass, a sharp click is heard in the receiver.

Colonel Clayton, a gentleman who was shot in the chest at the battle of Cedar Mountain during the late war, and still retains the ball, presented himself as a subject for illustrating the *modus operandi* of the induction balance, and by means of this apparatus the location of the ball was easily determined to be at the junction of the clavicle with the sternum.

In order to demonstrate the working of the telephonic probe Dr. Girdner employed a piece of beef, in which a mass of lead was deeply embedded, and the experiment of detecting its precise location was entirely satisfactory to all who had the opportunity of personally testing the apparatus.

DR. NEWTON M. SHAFFER read a paper on the use of

TRACTION IN THE TREATMENT OF CLUB-FOOT,

with a consideration of some of its mechanical principles involved, and a description of the antero-posterior and lateral traction apparatus. He said that more than ten years ago he commenced a series of experiments in connection with the treatment by traction, and that the results of these early experiments were embodied in a paper which he had published in the autumn of 1878. This was however, merely a provisional paper, and since the time of its appearance he had made many improvements in the apparatus employed. Further experience had fully convinced him of the great importance of the "pusher" principle.

Dr. Shaffer illustrated the normal foot movements by a series of diagrams. There is only one centre of antero-lateral rotation in the ankle-joint, he said, and this centre of motion is situated below the malleoli. In order to correct the deformity of talipes equinus the heel must be made to move downward and forward, and the toes must move upward and backward. Then much of the astragalus rotates around the same centre of rotation as the heel and toes, and it rotates upward and backward. The normal movements of the foot should

be exaggerated, on account of the resistance which is met with.

In the conventional club-foot apparatus there are various defects. Thus, as the anterior part of the foot rotates upon its artificial ankle-joint centre, or, in other words, as we crowd the os calcis into the heel-cup, and attempt to flex the foot, the heel, unless restrained, slips forward. The attempt is made to control this movement by tying the heel down to the foot-plate and in the heel-cup, with the heel-strap. If, after this heel-strap is tied, a considerable pressure be applied in the direction of flexion (even, in many cases, after tenotomy), the further tendency of the heel (being restrained in front by the heel-strap) is to slip upward and backward away from its artificial annular ligament, ultimately, in many cases, resting on the tip of the heel-plate which forms the cup. When this occurs, all control over the foot is lost, as it turns toward that side upon which the contractions exist. One of the direct effects of mechanical flexion, as applied in the customary forms of apparatus, to overcome either a post-tibial or a plantar contraction, is to crowd the tarsal bones together.

Dr. Shaffer then described his antero-posterior traction apparatus, by means of which, through the agency of an arm and screw, any desired angle of flexion or extension could be secured. The Scarpa heel-cup, which had been so long and universally employed, he said, is not necessary here, and a semicircular opening is provided for the descent of the heel. In connection with the traction heel-strap an astragalar strap is worn over a pad, and this astragalar strap is to be loosened in order to allow of rotation. When plantar contractions are to be overcome, however, the astragalar strap should not be loosened.

In equino-varus the lateral pushing force has many advantages over the lateral pulling force. Simple, uncomplicated equino-varus, he considered a rare condition. The lateral traction apparatus, which he also described and exhibited, he said, acted as a lateral pusher (evicting the foot), brought the foot up into a position of flexion, and caused the anterior portion of the tarsus to rotate outward.

When we have to do with confirmed deformity it is necessary that sufficient force should be used to overcome the resistance present; and he spoke of the great benefit which he had seen derived from the employment of exaggerated traction maintained for a few seconds or minutes, according to the degree of tolerance present, and repeated at frequent intervals. In his experience, excoriations occurred only as the result of neglect on the part of the attendants.

When the traction apparatus is used, the knife is unnecessary in many cases where it would ordinarily be required. There are, however, a certain number of rare cases which do not yield to simple traction, and in these tenotomy is demanded. In such instances, however, the patients are much more liable to complain of pain and discomfort from the wearing of the apparatus (after tenotomy), than in those which are treated by means of traction only. While there are a few cases which will not yield to traction either with or without tenotomy, Dr. Shaffer said he knew of no apparatus so efficient and complete as these traction shoes. In conclusion, he stated that nine years ago he

had predicted that tenotomy would be much less frequently resorted to than formerly, and he was glad to say that this prediction had been realized, as the foot is a more natural one when no cutting is required.

DR. RIDLON said that he had not been able to get as good results with the lateral shoe as Dr. Shaffer himself, who was remarkably skilful in applying his traction apparatus. Again, there are certain cases in which the use of traction is not followed by good results. We should be able, he thought, to judge at the beginning whether in any case traction would be beneficial or not, and the test of "point-pressure" enabled us to say whether or not tenotomy was called for. Dr. Shaffer, on the other hand, is in the habit of first trying stretching for a time, and then, if the result is not satisfactory, he performs tenotomy. It is better, in his opinion, to cut at once in those cases in which the operation is necessary.

DR. KETCH said that he had had an experience of over nine years with the traction shoe, and he desired to call attention to two points: First, the possibility of treating many cases of club-foot without an operation of any kind, and, second, the fact that the benefit to be derived from the principle of the use of intermittent force, for the credit of the introduction of which we are indebted to Dr. Shaffer, is not sufficiently appreciated. As early as 1885 Dr. Shaffer found that the danger of relapse after tenotomy, and its so-called after-treatment, was very much less if the traction apparatus was used.

DR. A. B. JUDSON said that it was clear that this apparatus of Dr. Shaffer was capable of exerting great force, and, therefore, it was especially necessary that it should be in careful hands. If, however, cases of club-foot are well managed from the first, this violence would not be required. By this he did not mean to reflect in any way upon the method of treatment described; but simply to refer to the desirability of an enlightened opinion in the community upon such subjects.

In closing the discussion, DR. SHAFFER said that he was at a loss to understand the want of success in the use of the lateral shoe, to which reference had been made. The application is simple, and it is only necessary that the shoe should accurately fit the deformity. The trouble was, he thought, that too much was attempted at first. The process of treatment must be a gradual one, with no haste and no violence. The method is a very easy one when the apparatus is perfectly adapted to the case, and just as much or as little power as is required could be used with it. In regard to the matter of "point-pressure," he said that some of his best results with traction alone had been obtained in cases in which this so-called test indicated tenotomy. For his part, he knew of no guide by means of which he could tell at first whether cutting would be required.

NEW INVENTIONS.

A MODIFIED LORING OPHTHALMOSCOPE.¹

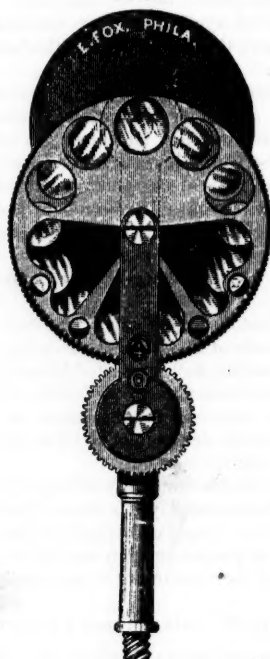
BY B. ALEX. RANDALL, A.M., M.D.,
OF PHILADELPHIA.

A DESCRIPTION of a disk of cylindrical lenses as an addition to the ophthalmoscope was published by the

writer in THE MEDICAL NEWS of October 17, 1885, and the practical value of the addition, as well as its applicability to many of the usual forms of the instrument, was there pointed out. Some minor inconveniences in its application to the newer Loring ophthalmoscope, for which it was more especially designed, were also noted; and a modified model of that instrument, then in course of construction, was promised as free from these and other disadvantages. This new model, having met the demands of practice, is now presented.

As indicated by the cut (Fig. 1) which shows it in its simpler form, without the disk of cylindricals, the in-

FIG. 1.

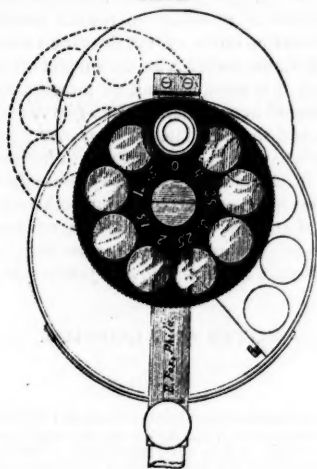


strument corresponds closely in its dimensions to the smaller model of Dr. Loring's ophthalmoscope. The main disk has twelve openings, one vacant and the others containing spherical lenses, 7 mm. in breadth, from + 5 to - 6 D.; the supplemental disk or "quadrant" contains + 0.5 and + 13 D. on one side of its zero-opening, and the corresponding concave lenses on the other. The main disk is rotated as usual by the pressure of the finger upon its milled edge; the supplemental disk articulates with a cogwheel below it in the handle, and is moved by its rotation—spring-stops serving to centre all lenses accurately at the sight-hole. The numbers indicating the lenses in use appear at the openings near the handle, where they cannot be hidden by the addition of the disk of cylinders. This latter has been sufficiently described and its means of application to the instrument is indicated by the dotted lines of Fig. 1. It is represented in Fig. 2 as added to the usual Loring ophthalmoscope. The convex lenses thus given in unbroken series are + 0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18; and the concaves are the same with the addition of

¹ Presented at the meeting of the American Ophthalmological Society, 1886.

—6.5 and 19—a series ample for all but exceptional cases; while the quadrant might be made to accommodate a —24 if desired, and thus extend the series of con-

FIG. 2.



caves to —30 D. The cylindrical lenses are *concaves* from 0.5 to 4, and furnish all ordinary sphero-cylindrical combinations.

The maximum thickness of the instrument at the sight-hole, when the cylinder-disk is added, is 10 mm., and the weight is 47.4 grammes—as compared with 7.75 mm. and 45.2 grammes of the Loring. Without the cylinders it is practically identical with it in thickness, weight, and balance—a point worth emphasizing. The cost is but slightly greater; and the increased complexity seems fully justified by the increase in efficiency.

The instrument was designed in most respects six years ago, before the appearance of other models, such as Dr. Noyes', embodying similar ideas; but is offered solely as an adaptation of the Loring instrument to the needs which the writer has felt in his own work. The practical value of the arrangement which makes the 0.5 lenses *self-centring* and always available at a touch, will be contested by no one who tries to make careful measurements with the ophthalmoscope; and, although but a small part of the long continuous series of concaves or convexes is wanted at any one time, every ophthalmoscopist has experienced the awkwardness of working with the lenses at the "break," or transition from the single lens to the compound lenses of the double disk, and will find the new model a convenience in these respects. The disk of cylinder-lenses had already proved its practical value when attention was called to it, and an additional year of use has more than confirmed the favorable opinion then held.

The change of the lower journal of the tilting-mirror into a spring-clip, permits the ready removal of the usual concave mirror and the substitution of a plane or weak-light mirror: while without it, the instrument is more readily utilized as an optometer (in the absence of the case of test-glasses), either for the subjective determination of the refraction or for measuring by neutralization the strength of other lenses—a use in which the ophthalmoscope has often proved valuable. As

constructed by Mr. Fox, of 17th and Chestnut Sts., this new model will compare not unfavorably with the most perfect examples of Dr. Loring's ophthalmoscope.

NEWS ITEMS.

A PRIZE ESSAY ON HAY-FEVER.—The Chairman of the Committee on Scientific Facts, of the United States Hay-fever Association, asks leave to submit the following to the members, and to the medical fraternity, and to all who are interested, whether as sufferers or students of this increasing malady:

At its last meeting, September, 1886, at Bethlehem, N. H., the Association decided to offer a prize for the best essay from a competent source, preferably a physician, on some question relating to *Estivis*, or Hay-fever. The amount is necessarily small; but as the accepted essay will be published in the Association's report, when the extent of its circulation, and the character of those whom it will reach shall be considered, it is thought that the successful treatise will give to its author a reputation worth the effort.

In order to carry out the above the following is announced officially:

1. Subject of the essay, Hay-fever. (a) Its Pathology. (b) The predisposing, and the aggravating causes. (c) Advice to the sufferer.
2. The essay not to exceed *four thousand words*, and to be as practical and non-technical as possible.
3. The manuscripts to be received at the office of Samuel Lockwood, Freehold, New Jersey, not later than April 30, 1887.
4. Each manuscript to have a motto under the title, and to be accompanied with a sealed letter containing said motto, also the name and address of the author. These letters not to be opened until after the award is decided.
5. The prize to be \$25, The accepted essay to be published immediately in the Association's annual report, one hundred copies to be given the author.

THE SPRINGFIELD, MASS., CITY HOSPITAL has had bequeathed to it, in the will of the late Mr. William Merrick, a sum stated to be between \$75,000 and \$100,000. Together with the \$25,000 received from Mrs. Chester W. Chapin, this places the institution on a good footing, and it is understood that the trustees are looking about for a new building, the present property being at too great a distance from the business portion of the city.—*New York Med. Journal*, Jan. 29, 1887.

DR. THOMAS E. MCARDLE has been compelled, on account of ill health, to resign the position of Professor of Surgery in the Medical Department of the National University, Washington, D. C., and Dr. Philip T. Harvey, U. S. Army, has been appointed to fill the vacancy.

A NEW GERMAN MONTHLY DEVOTED TO THERAPEUTICS has just appeared, edited by Liebreich, Langgaard, and Rabow. Its scope embraces original communications from celebrated clinicians, reports of the discussions and actions of societies, descriptions of new remedies and methods of treatment; its first number contains interesting matter from Kohls, Hausmann, Veit, Casper, Liebreich, and others.

BERLIN DISINFECTION STATIONS.—These stations, established November 1st, have done excellent work. The populace has availed itself of these establishments independently of police regulations.

From November 1st to December 15th, 10,593 pieces were disinfected, comprising bedding, clothing, furniture, and all articles of personal use. The material for disinfection came from 261 persons, and the cases were mostly diphtheria and scarlatina.—*Berliner klinische Wochenschrift*, January 17, 1887.

PROFESSOR JOHANN RUDOLPH RANKE.—The University of Groningen is just now mourning the loss by death of the much respected Professor of Surgery, Dr. Johann Rudolph Ranke, who, though a foreigner, seems to have endeared himself to all classes of the people. For the last eighteen months he had suffered from the effects of blood-poisoning, which had caused him continual severe pain; but he stuck most heroically to his work to the last, teaching from his bed students who were about to present themselves for examination, and, on days when he was somewhat better, going in a bath-chair to the university or hospital. Only three days before his death he performed an important operation.

THE VIENNA HOSPITAL.—From a statistical report of the great Vienna Hospital, which has just been published, we learn that during 1885, 26,448 patients were treated there. Of these, 13,000 were discharged cured and 4000 improved. Some were removed to other institutions, as many as 1000 being sent to lunatic asylums and more than 500 to the smallpox hospital. There were 2898 deaths. The total number of patients during the last hundred years was 1,654,729, amongst whom the mortality was 237,218, or 14.33 per cent. In 1885, which was the first year of the second century of the hospital's existence, the number of admissions was 8000 in excess of the annual average for the preceding hundred years, and 3300 in excess of that of the preceding ten years, the mortality being 0.95 less than that of the century, and 0.63 less than that of the last ten years.

THE HIGHER EDUCATION OF WOMEN.—In the second Lettsomian Lecture, delivered by Dr. Langdon Down, before the Medical Society of London, on Monday last, some interesting remarks fell from him in reference to the effect of the higher education of women in the production of feeble-mindedness in their offspring. Coming from so good an authority, and based as they are on an experience of infantile mental affections extending over so long a period of time, they have a scientific as well as a social interest, which justifies attention being called to them. No objection, he said, was shown to women being taught everything relating to art, music, or their emotional life, but directly attempts were made to cultivate their judgment, to teach them how to reason, to inculcate habits of self-control, the proposal was met by clamors, which, in his opinion, were not based on experience, and, so far as the etiology of feeble-mindedness was concerned, were likely to be prejudicial. Still more emphatic was Dr. Down's assertion that if there is one thing more certain than another about the production of idiocy, it is the danger which arises from the culture of only one side of woman's nature. The whole gist of the matter lies in the necessity of propor-

tioning the education given to the physical and mental calibre of the recipient. The average female mind is often assumed to be inferior in power and compass to the average male intellect, but the difference is not, according to Dr. Langdon Down, such as to render it either desirable or necessary to restrict female education to the narrow limits of the drawing-room and the kitchen. Reliable statistics on the subject are not forthcoming, and it is even difficult to imagine any which could command acceptance. The observance of ordinary care, and the mandates of elementary physiological knowledge, will, in all probability, afford as great a safeguard in this direction as they do in the region of athletic exercise for girls. Either or both may be overdone, but if this occur, it is only in consequence of inattention to, or ignorance of, this very important subject.—*British Medical Journal*, January 22, 1887.

NOTES AND QUERIES.

A CORRECTION.

After my communication on Chloroform and Ether Deaths (in the Correspondence of THE NEWS for last week) had left my hands, I discovered that in the transcription of my rough notes the word "detailed" had been omitted in my comment on Dr. Reeve's Case IV. It should read, "there is no detailed mention of an autopsy."

I have had the curiosity to look up this case, which is in the *New York Herald* for Nov. 22, 1875. The operation was done at a homœopathic college, and the physician who had his hand on the pulse testified that it was good at the moment the face turned blue. At the post-mortem, made by Drs. Cushman and T. C. Finnell, there was a strong odor of ether perceptible; the brain, lungs, liver, and kidneys were congested; the heart small and fatty. Dr. Finnell, at the coroner's inquest, ascribed the death to the action of ether on the fatty heart.

It seems to me that the supposition of the Editor of the *Boston Med. and Surg. Journal*, that the death was due to the presence of blood in the trachea, is more likely to have been correct.

JOHN H. PACKARD, M.D.

PHILADELPHIA, February 7, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 1 TO FEBRUARY 7, 1887.

FRYER, BLENCOME E., Major and Surgeon.—Ordered to Fort Lowell, Arizona Territory.—*S. O. 20, A. G. O.*, February 4, 1887.

LORING, L. Y., Captain and Assistant Surgeon.—Leave of absence still further extended three months on surgeon's certificate of disability.—*S. O. 29, A. G. O.*, February 4, 1887.

BRECHENSIN, LOUIS, Captain and Assistant Surgeon.—Granted leave of absence for four months, with permission to go beyond sea. To take effect when his services can be spared by his department commander.—*S. O. 28, A. G. O.*, February 3, 1887.

POWELL, JUNIUS L., Captain and Assistant Surgeon.—Granted leave of absence for two months, to take effect when his services can be spared by his department commander.—*S. O. 24, A. G. O.*, January 29, 1887.

BARROWS, C. C., First Lieutenant and Assistant Surgeon.—Ordered for temporary duty as Post Surgeon at Fort Barrancas, Florida, to take effect upon the expiration of his present leave of absence.—*S. O. 24, Division of the Atlantic*, February 3, 1887.

PHILLIPS, JOHN L., First Lieutenant and Assistant Surgeon.—Leave of absence further extended one month.—*S. O. 29, A. G. O.*, February 4, 1887.

WOOD, LEONARD, First Lieutenant and Assistant Surgeon.—Ordered to proceed to these Headquarters, and report to the Department Commander for temporary duty.—*S. O. 12, Department of Arizona*, January 31, 1887.